

STATE OF HAWAII
DEPARTMENT OF HEALTH

AGRICULTURAL BURNING PERMIT

IS HEREBY ISSUED TO

HAWAIIAN COMMERCIAL & SUGAR COMPANY

(NAME)

SUGARCANE FIELDS AS INDICATED ON CURRENT MAP, MAUI (Public Lands)

(BURN LOCATION)

Subject to Hawaii Revised Statutes (HRS), Chapter 342B; Hawaii Administrative Rules (HAR), Chapter 11-60.1; and all the following conditions unless modified or replaced by any attached special conditions:

1. Permittee shall notify the Maui Police Central Dispatch at (808) 244-6400 and the fire station nearest to your burn location at least one hour prior to each burn.
2. **BURNING IS NOT allowed during a "no-burn" period declared by the Department of Health (DOH) under §11-60.1-55, HAR.**
3. Permittee shall provide an adequate water source to the burn location which will prevent the fire from spreading to areas adjacent to burn location.
4. An inspection shall be conducted on all accessible areas of each field prior to burning. Any batteries, abandoned vehicles, wastes handled or processed by sugar factory operations, tires, petroleum wastes, appliances, furniture, logs greater than 4" in diameter, hazardous wastes, 55 gallon drums and other similar items which may have been deposited in the burn area and identified by the inspection shall be removed prior to any burn. Burning of agricultural wastes that are not generated from the burn location is prohibited. In the pre-burn checklist document that the inspection was conducted prior to burning of the field.
5. Fire shall be attended or supervised by an adult in accordance with Exhibit 1 (HC&S Burn Procedures) which is attached hereto and incorporated herein.
6. The following fields, as indicated in the 2016 Harvesting Schedule, the 2016 Unscheduled Fields List, and map submitted by the permittee, shall be burned in accordance with Exhibit 1 (HC&S Burn Procedures): 212, 411, 501, 502, 604, 608, 741, 743, 745, 747, 911, 916, and 917; which are attached hereto and incorporated herein.
7. The following fields, which are nearest to roadways and Kahului airport, as indicated in the 2016 Harvesting Schedule, the 2016 Unscheduled Fields List, and map submitted by the permittee, shall be burned in accordance with Exhibit 2: 212, 501, 502, 604, 608, 741, 743, 745, 747, 911, 916, and 917; which are attached hereto and incorporated herein.
8. The following field, as indicated in the 2016 Unscheduled Fields List, and map submitted by the permittee, shall be burned in accordance with Exhibit 3: 411; which is attached hereto and incorporated herein.
9. The following fields, as indicated in the 2016 Harvesting Schedule, the 2016 Unscheduled Fields List, and map submitted by the permittee, shall be burned in accordance with the schedule below (peak traffic hours are 7:00 a.m. - 8:30 a.m. and 3:30 p.m. - 5:00 p.m.) All flames must be extinguished by the end of the burn period:
 - a. The following fields shall be burned between the hours of 3:00 a.m. and 6:00 a.m.: 604, and 608.
 - b. The following field shall be burned between the hours of 6:00 a.m. and 6:00 p.m.: 411.
 - c. The following fields shall be burned between the hours of 4:00 a.m. and 6:00 p.m., excluding peak traffic hours: 212, 501, 502, 741, 743, 745, 747, 911, 916, and 917.

PERMIT NO. AGP - **16-001P**
Effective Date: **2/1/2016**
Expiration Date: **2/1/2017**
Mail Out Date: **2/1/2016**

10. Only controllable amounts, **not to exceed 100 acres per burn**, shall be burned and under conditions that will minimize visible ground level smoke from entering any residence, business, or public area. With the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed under Condition 7 in accordance with Exhibit 2, if a burn has begun and visible ground level smoke enters any residence, business, or public area, permittee shall not burn additional fields that day which would affect such impacted areas until meteorological conditions improve. If a decision is made to conduct additional burning under this provision, permittee shall notify DOH by telephone prior to the day's next burn and shall document the justification for conducting additional burns on a Burn Justification Log. This documentation shall include the location of the original burn and of residences, businesses, or public areas that were impacted by visible ground level smoke, the planned location of any subsequent burns that day, a description of any problems encountered during the original burn which may have contributed to visible ground level smoke in a residence, business, or public area and any corrective actions implemented to address them, any changes in meteorological or field conditions since the initial burn, and identification of downwind areas most likely to be impacted by the next burn.
11. Visible ground level smoke entering any residence, business, or public areas, with the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed under Condition 7 in accordance with Exhibit 2, or smoke impacts from fires not caused by the permittee (e.g., malicious fires, brush fires), shall not exceed a Public Impact Code of 3, as described in Exhibit 1. After completion of the burn, smoldering piles shall be promptly addressed in compliance with Exhibit 1.
12. Permittee shall submit a written report to DOH within five (5) working days after any deviation from the permit requirements, including the procedures specified in Exhibits 1, 2 and 3 and accompanying attachments. The report shall identify the probable cause of the deviation and any corrective actions or preventive measures taken.
13. Permittee shall monitor all burns and maintain a record of the meteorological conditions and plume behavior throughout each burn. To the extent practical, photos shall be taken of the plume behavior. A copy of each Pre-Burn Checklist, Exhibit 2/Exhibit 3 Checklist, Burn Monitor Log and the Daily Weather and Dispersion Forecast shall be submitted to the DOH, either in hard copy or electronically, within seven (7) days after Friday of each week or upon request.
14. All records, including support information, shall be true, accurate, and maintained in a permanent form suitable for inspection, retained for a minimum of three (3) years following the date of such records, and made available to the DOH or its representatives upon request.
15. Permittee shall keep a copy of this permit at the burn site during the burn and shall make it available for inspection upon request.
16. For the purpose of determining compliance with this permit, the DOH or its duly authorized representatives shall be granted access to the property at reasonable times, pursuant to HRS, §342B-41, Inspection of Premises. The DOH shall not be denied access to burn sites.

The DOH reserves the right to terminate, suspend, reopen, or amend this permit, subject to HAR §11-60.1-57 (e). Violation of any condition of this permit, any section of Chapter 342b, HRS, or any section of Chapter 11-60.1 HAR, may result in fines no greater than \$10,000.00 for each day of each violation, pursuant to §342b-47(b), HRS. In addition, a violation may be reason for amendment, suspension, or revocation of this permit.

BY: _____



MANAGER, CLEAN AIR BRANCH

**Hawaiian Commercial & Sugar Company
2016 Agricultural Burning Permit - Exhibit 1**

This exhibit describes general procedures to be followed for pre-harvest burning of sugarcane in order to minimize public exposure to visible smoke impacts. Included are procedures to be followed prior to, during, and after each burn. The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that all fields are burned in accordance with these procedures.

Additional requirements are specified for individual fields in Exhibits 2 and 3 and these requirements shall also be followed.

A. Actions to be taken prior to burning:

- (1) Assessment of field location and actions for sensitive downwind areas - Prior to burning any field, the Harvesting Manager shall review the location of the field with respect to certain sensitive areas to determine the types of public notifications necessary and any restrictions on when the field can be burned.

For the purposes of this assessment, sensitive areas downwind of the field being burned shall be identified based on the surface wind direction measured at the weather station(s) specified in Exhibit 2 or 3. An area shall be considered “downwind” of the burn if it falls within a cone encompassing 15 degrees on either side of a line extending in the direction of the ground level wind from any part of the burn area.

Also for the purposes of this exhibit, “adjacent” or “abutting” mean directly adjoining the field being burned or separated only by a roadway.

(a) Public Notification Procedures

Public notifications specified for each burn are listed in the attached Cane Burn Notification listing (Attachment 1a) and are described below.

- i. **Written Notices:** For those fields for which written notices are specified in Attachment 1a, attempts will be made to deliver flyers to residential premises, schools, churches, and other facilities. By law mailboxes cannot be used for this purpose, and some residences may not be accessible (e.g., due to dogs, locked gates, etc.) or may have no other provisions for receiving written notices; therefore, reasonable efforts will be made to leave written notices where they are likely to be seen by occupants of the premises. Where multiple dwellings may be present on a single residential property, the notification attempt will be made to the dwelling most readily accessible from the street. Where a particular residential area is specified in the “Written Notice” column of Attachment 1a, HC&S shall make reasonable efforts to ensure that all residential premises in the specified area receive written burn notifications. Where the words “Adjacent Residents” appear in the “Written Notice” column, HC&S shall make reasonable

efforts to deliver notices only to those homes immediately adjacent to the field. A sample flyer is included as Attachment 1b.

- ii. **Telephone Notifications:** Telephone notifications will be attempted at least two hours prior to scheduled burns for those individuals who have specifically requested such notifications. A call list is maintained for these individuals and is updated as new requests are received. Reasonable attempts at phone notifications will be made; notifications may be precluded when no one answers the phone, there is no answering machine or voice mail, the number is out of service, or in similar circumstances.
- iii. **Road Signs and Guards:** For fields adjacent to roads and highways, signs and/or traffic guards shall be posted as indicated in the Cane Burn Notification listing to alert approaching motorists.
- iv. **Police and Fire:** The Maui Police Department Central Dispatch and the nearest fire station shall be notified prior to each burn as specified in the Agricultural Burning Permit. Notifications shall be made at least one hour prior to burning. The time of notification shall be recorded on the Pre-Burn Checklist (Attachment 1d).

(b) Restrictions on Burning – Schools

- i. **Fields Upwind of Abutting Schools**
Fields which are upwind of abutting schools shall not be burned while school is in session. Burns will be scheduled so that they are completed (i.e., all flames extinguished) at least one hour prior to the start of school or else will be conducted after school hours. The Harvesting Manager shall maintain and make available to the Department of Health a list of all known schools located adjacent to HC&S fields (Attachment 1c) and their normal hours of operation, including any summer school and after school programs. If necessary, permission will be requested from the Department of Health to burn such adjacent fields after 1800 in order to prevent any smoke impacts. To the extent feasible, the Harvesting Manager shall directly coordinate efforts with administrators of abutting schools to further reduce the potential for burns in immediately adjacent fields to impact the school.
- ii. **Fields with Elevated Potential to Impact Nearby Schools**
Prior to burning a field which, based on previous experience, has an elevated potential to result in visible smoke impacts at a nearby school, the Harvesting Manager shall ensure that the assessment of meteorological conditions includes a review of wind data from the previous day to determine whether variable/shifting winds are likely at the expected burn time.

iii. Fields Directly Upwind of and Within 2,000 Feet of a School

Prior to burning a field located directly upwind of and within 2,000 feet of a school while school is in session, the following additional precautions shall be observed:

- Burning shall be avoided under conditions when the Air Quality Index (as applicable per Section A.(9)) is outside of the GOOD range (this condition shall not apply when the AQI is unavailable from the AirNOW website);
- Burning shall be delayed when predicted conditions for BOTH dispersion and plume rise are less than optimal (i.e., when dispersion is predicted to be no better than “fair” AND a “weak” inversion is predicted for the scheduled time of the burn). Under such conditions, burning shall be delayed until after the predicted inversion has broken.

A list of fields located within 2,000 feet of a school and an accompanying map are provided as Attachment 1l.

As specified in Section A.(1).(a) above, notification to the person responsible for these facilities will be attempted two days prior to scheduled burns.

iv. Fields Directly Upwind of and Within Three Miles of a School

Fields which are directly upwind of and within three miles of a school may be burned under conditions which will minimize ground level visible smoke from impacting school property. However, when school is in session on the day of the burn and the burn will not be completed at least one hour prior to the start of school, special burn monitoring as specified in paragraph B.(1).(h) below shall be conducted. A map of fields located within three miles of a school is provided as Attachment 1n.

(c) Restrictions on Burning – Churches

Fields upwind of adjacent churches shall not be burned during scheduled church services. As specified in paragraph A.(1).(a) above, notification to the person responsible for these facilities will be attempted two days prior to scheduled burns. Additionally, to the extent feasible, the Harvesting Manager shall directly coordinate efforts with persons in charge of abutting, established churches in order to help ensure that burning during scheduled services will not occur. A map of churches abutting HC&S sugarcane fields is provided as Attachment 1m.

(d) Restrictions on Burning - Public Roadways

The following public roadways may be impacted by smoke during burning and are considered potentially hazardous roadways:

Hana Highway
Haleakala Highway
Mokulele Highway/Puunene Avenue
Pulehu Road
North Kihei Road

Haliimaile Road
Baldwin Avenue
Kuihelani Highway/Dairy Road
Honoapiilani Highway

Fields adjacent to these roadways shall not be burned during peak traffic periods (0700-0830 and 1530-1700) unless otherwise authorized in the permit. In order to minimize traffic impacts and potentially hazardous conditions, HC&S will request approval from the Department of Health to burn most fields adjacent to these roadways between the hours of 0400 to 0600. As noted above, signs will be posted and/or roadways may be manned by traffic control guards (private security or off-duty police officers) for these fields. The Police Department shall be notified prior to burns that may impact traffic on roads and highways.

(e) Restrictions on Burning - Public Recreation Areas

There shall be no burning of fields directly upwind from adjacent public recreation areas on Sundays. To the extent practicable when reasonable advance notification has been provided, efforts shall be made to adjust the harvesting schedule in order to further reduce the potential for smoke to impact planned and organized public activities (e.g., fairs, carnivals, charity walks, athletic events, etc.) in downwind areas adjacent to fields scheduled for burning.

(f) Restrictions on Burning - Airport

In order to minimize impacts on airport operations, HC&S will request approval from the Department of Health to burn fields adjacent to the airport or located in the airport approach path between the hours of 0300 to 0600. The airport control tower shall be notified by telephone prior to burns in the vicinity of the airport as noted in the Cane Burn Notification listing.

(g) Exhibit 2 and Exhibit 3 Burn Conditions

All burns shall be conducted in accordance with the conditions and limitations specified in Exhibit 2 or Exhibit 3, as applicable.

- (2) "No Burn" declarations - Upon issuing a "no burn" declaration, the Department of Health representative will notify the HC&S Harvesting Manager via cellular telephone. Prior to burning, the Harvesting Supervisor in charge of the burn shall contact the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) to determine whether the Department of Health has declared a "no burn" period. **Burning shall not be conducted during any "no burn" period declared by the Department of Health.**

- (3) Red Flag Warnings - A Red Flag Warning is an advisory from the National Weather Service intended to inform firefighting and land management agencies when weather conditions may pose an increased risk of wildfire ignition and propagation. A Red Flag Warning is advisory in nature, not regulatory. However, local fire agencies may, *at their*

discretion, impose a ban on outdoor burning when warranted by local conditions. Upon receipt of any notice from the Maui Fire Department (MFD) that a ban on outdoor burning is in effect on Maui, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that burning does not occur in the areas covered by the ban until MFD advises that the ban has been lifted.

(4) Assessment of meteorological conditions

(a) Prior to burning, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall review available meteorological data, including wind speed and direction, to determine likely smoke plume behavior and whether conditions are suitable for burning. Burning shall only be conducted under conditions that will minimize ground level visible smoke from entering residences, businesses, or other areas to which the public has unrestricted access. The following sources of data shall be considered:

- Western Weather Group (WWG) smoke management weather and dispersion forecast (obtained daily through computer link); particular attention shall be paid to any “Cautionary Notes” included in the forecast
- Existing weather conditions from HC&S weather stations, especially those nearest to the burn location
- Wind data from field measurements at the burn site
- “Real-time” plantation stability data provided by WWG
- Rainfall data from automated weather stations in the area of the field to be burned and from in-field manual rain gages
- Records and experience from past burns indicating historical weather data, corresponding smoke plume behavior, and, where available, post-burn air quality monitoring data recorded pursuant to Section C.(3)
- National Weather Service (NWS) forecasts, including but not limited to the NWS Fire Weather Forecast

(b) In addition to the above data sources, direct consultations with a WWG staff meteorologist prior to burning shall be considered when meteorological conditions are uncertain, highly variable, or otherwise warrant particular caution.

(c) Burning shall only be conducted under the wind conditions specified in the Exhibit 2 or Exhibit 3 corresponding to the field being burned. Burning shall not be conducted under the following wind conditions:

- i. Sustained surface wind speed, determined as specified in Exhibit 2 or 3, is less than three miles per hour; OR,
- ii. Average transport winds from the morning soundings at BOTH Hilo and Lihue, as reported in the WWG forecast, are seven miles per hour or less. If average transport winds for *either* Hilo or Lihue (but not both) are seven miles per hour or

less, burning may proceed with caution provided that conditions are determined to be favorable for smoke dispersion and all other conditions for burning are met.

- (d) Burning shall not be conducted unless a complete WWG smoke management weather and dispersion forecast has been provided for the field to be burned.

(5) Assessment of predicted dispersion in area of field being burned

- (a) The WWG daily weather and dispersion forecast shall include predicted conditions for smoke dispersion at the scheduled burn time and for later in the day in the area of each field planned to be burned on that day.
- (b) Unless smoke dispersion for a particular field is predicted to be “fair” or better at the scheduled burn time, that field shall not be burned on the day covered by the forecast except that burning may be considered later in the day if the forecast predicts that dispersion for that field will improve to “fair” or better. Dispersion conditions predicted for a particular field shall only affect burn decisions made for that field, and will not necessarily preclude burning in other fields.

(6) Assessment of temperature inversions and mixing height

- (a) The WWG daily weather and dispersion forecast shall include the predicted likelihood of a morning temperature inversion in the area of each field planned to be burned on that day.
 - i. When a “moderate” or “strong” morning inversion is predicted in the area of a particular field, that field shall not be burned until after the inversion is predicted to break. This will typically occur around mid-morning, but consultation with WWG is recommended in order to confirm.
 - ii. When a “weak” morning inversion is predicted in the area of the field to be burned, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall evaluate all relevant information on the WWG forecast (including the morning inversion prediction, the cautionary notes, and the plantation stability), as well as other available information (e.g., NWS forecast, visual indicators of inversion conditions) to determine whether the predicted inversion is likely to adversely impact smoke dispersion. Inversion conditions predicted for a particular field shall only affect burn decisions made for that field, and will not necessarily preclude burning in other fields elsewhere on the plantation.
- (b) The “mixing height” provides another indication of a possible temperature inversion and shall be assessed before burning. The mixing height is defined as the height to which the lower atmosphere will undergo turbulent mixing, producing a nearly

homogeneous air mass. A mixing height of 1,700 feet above ground level is generally considered to be favorable for good smoke dispersion, while lower mixing heights are less favorable. Because monitoring capabilities are not currently available for directly determining mixing heights on Maui, modeled estimates available via the NWS Fire Weather Forecast (http://www.prh.noaa.gov/hnl/pages/firewx_graphics.php?island=mc) shall be reviewed and considered.

- i. Within one hour prior to the start of the burn, the Harvesting Manager (or his designee) shall check the NWS Fire Weather Graphical Products website for the forecast mixing heights on Maui and shall save and print a “screen shot” of the web page.
 - ii. Two forecast mixing heights are provided for the Central Valley at various forecast hours (0400, 0700, 1000, etc.). If either or both of these mixing heights are less than 1,700 feet at the forecast time closest to the burn time, burning shall not be conducted until conditions are predicted to improve. Burning may be conducted later in the day if the mixing height is forecast to be 1,700 feet or more at the later burn time.
 - iii. The Fire Weather Graphical Products website is maintained by the National Weather Service and HC&S has no control over the continued availability of this product. In the event that the website is down, has not been updated, is providing clearly erroneous data, or the information available on the website has significantly changed or the format has been modified such that compliance with this provision is no longer feasible, then compliance with this provision of Exhibit 1 shall not be required as part of the pre-burn assessment. HC&S shall retain the flexibility to evaluate whether a new or modified NWS mixing height forecasting tool is sufficiently reliable and suitable for incorporation into its pre-burn assessment procedures.
- (c) When evaluating the potential for a forecast temperature inversion to impact smoke dispersion, it is important to differentiate between low level inversions (i.e., those that occur below about 1,700 feet in elevation) and the higher level “trade wind inversion”. The trade wind inversion is an extremely common phenomenon in the Hawaiian islands, existing about 80 percent of the time, and is often referred to in the NWS Hawaii extended weather forecast because of its influence on overall weather conditions; however, the trade wind inversion generally exists at an altitude of 5,000 to 6,000 feet *where it has no discernable effect on local smoke dispersion*. Conversely, morning temperature inversions occurring at lower altitudes can significantly impact smoke dispersion but are not nearly as common, may be highly localized, and are typically not identified in state or local weather forecasts. The presence or absence of the high level trade wind inversion is not relevant to the assessment of likely smoke plume behavior under this exhibit, except to the extent that it influences other meteorological conditions (e.g., winds and rainfall) that are already separately considered.

(7) Assessment of field moisture

- (a) The WWG daily weather and dispersion forecast shall include information regarding rainfall measured within the previous 24 hours at the automated weather station(s) in or nearest to each field scheduled to be burned. Additionally, where automated rain gage coverage is insufficient, manual rain gages shall be placed in or adjacent to fields scheduled to be burned as part of normal harvesting preparations.
- (b) If any of the following conditions are met, the vegetative mat in the field shall be checked for moisture prior to burning:
 - i. Field moisture is listed as “wet” or “caution” in the WWG forecast. “Wet” shall indicate that rainfall over the previous 24 hours recorded by the automated rain gage in or nearest to the field to be burned is 0.5 inches or more. “Caution” shall indicate that measurable rainfall less than 0.5 inches was recorded by the automated rain gage in or nearest to the field to be burned over the previous 24 hours.
 - ii. Harvesting personnel observe rainfall occurring in the field to be burned within one hour prior to the start of the burn;
 - iii. Burning is scheduled to be conducted prior to 0600 such that heavy dew in the field is possible.
- (c) When field moisture is listed as “wet” or “caution” in the WWG forecast, the manual rain gage in or immediately adjacent to the portion of the field to be burned (if installed) shall be checked to determine the actual quantity of rainfall received during the previous 24 hours.
- (d) Burning shall not be conducted if any of the following conditions are met:
 - i. Rainfall over the previous 24 hours recorded by the manual rain gage in or immediately adjacent to the portion of the field to be burned is 0.5 inches or more;
 - ii. No manual rain gage is installed in or immediately adjacent to the portion of the field to be burned and rainfall over the previous 24 hours recorded by the automated rain gage in or nearest to the portion of the field to be burned is 0.5 inches or more; OR
 - iii. The vegetative mat is checked as required above and is determined to be too wet for burning.
- (e) When field moisture is listed as “caution” in the WWG forecast and burning is permissible, burning shall be conducted only with caution. When field moisture is

listed as “wet” in the WWG forecast and burning is permissible, burning shall be conducted only with extreme caution.

(8) Assessment of vog

- (a) The WWG daily weather and dispersion forecast shall include predictions for vog to impact air quality on Maui based on data from the University of Hawaii Vog Measurement and Prediction Project (VMAPP) website.
- (b) When the VMAPP tables of model predicted values indicate that sulfur dioxide and/or sulfate aerosol concentrations in Kihei will result in “moderate” (indicated by a rating of “yellow” on the WWG forecast) or “unhealthy” (indicated by a rating of “red” on the WWG forecast) air quality on the day covered by the forecast, burning shall not be conducted.
- (c) A rating of “green” on the WWG forecast indicates that air quality is predicted to remain in the “good” range despite any potential vog impacts. Burning in compliance with other applicable permit requirements is therefore permissible, subject to the limitations described below.
- (d) In the event that the VMAPP Hawaiian Islands Sulfate Aerosols animation predicts that any portion of the sulfate plume will impact Maui during the burn day, the WWG forecast will flag the “green” rating with an asterisk, advising that the vog model animation must be checked prior to burning. In that case, the Harvesting Manager (or his designee) shall examine the VMAPP Hawaiian Islands Sulfate Aerosols animation within one hour prior to the burn and shall assess and consider the potential for persistent, significant visible haze impacts from vog that could be compounded by burning.
- (e) If the VMAPP website is not functioning or the table of model predicted values is not posted, has not been updated, or is clearly erroneous at the time that the WWG daily forecast is prepared, then the forecaster shall indicate “NA” (not available) for vog data. In that event, this assessment of vog shall not be required for that day’s burns.
- (f) The VMAPP website is maintained by the University of Hawaii and HC&S has no control over the continued availability of data on this site. In the event that maintenance of the VMAPP website is discontinued, or the information available on the VMAPP website is significantly changed or the format modified such that compliance with this provision is not feasible, then compliance with this provision of Exhibit 1 shall no longer be required as part of the pre-burn assessment. HC&S shall retain the flexibility to evaluate whether a new or modified vog forecasting tool is sufficiently reliable and suitable for incorporation into its pre-burn assessment procedures.

(9) Assessment of existing air quality – Within one hour prior to each burn, the Harvesting Manager (or his designee) shall check the current Air Quality Index (AQI) for the

Department of Health's Kihei, Kahului, and Paia air monitoring stations posted on U.S. EPA's AIRNow website (<http://airnow.gov> ; under "Local Air Quality Conditions and Forecasts" in the top right corner of the page select "Hawaii" from the state scroll down menu and read "Current AQI" for Kihei, Kahului or Paia).

- (a) Rules for assessment of AQI when burning fields located on the Kihei (south) side of Kailua Gulch – Due to distance and prevailing winds, fields located on the Kihei side (i.e., to the south) of Kailua Gulch are unlikely to impact public areas in and around Paia Town. Therefore, only data from the Kihei and Kahului air monitoring stations shall be considered prior to burning these fields. The following limitations on burning shall be adhered to for all burns in fields located on the Kihei side of Kailua Gulch.
- i. If the AQI at both the Kihei and Kahului air monitoring stations is in the "good" range (indicating air quality meets state and federal standards), burning may be conducted as normal in compliance with all other applicable permit requirements.
 - ii. If the AQI at either the Kihei or the Kahului air monitoring station is within the "moderate" range (indicating air quality meets state and federal standards) and the AQI at the other of the two stations is in either the "good" or the "moderate" range, then additional caution shall be exercised to avoid burning under marginal conditions which could result in further degradation of the AQI or an exceedance of the 1-hour average PM_{2.5} limit specified in paragraph B.(1).(d). The Harvesting Manager shall evaluate whether predicted conditions for vog, dispersion and/or other meteorological conditions are marginal and may warrant calling a voluntary "no burn". Burning when the AQI is in the "moderate" range shall be conducted in compliance with all other applicable permit requirements.
 - iii. If the AQI at either the Kihei or the Kahului air monitoring stations (or both) falls within any "unhealthy" range, no burning shall be conducted until air quality improves and the AQI is again within the "good" or "moderate" range at both stations.
 - iv. If the AIRNow website is not functioning, no current AQI is posted for either the Kihei or Kahului air monitoring station, or the posted AQI for both stations is clearly erroneous at the time that the website is checked, then no assessment of the AQI shall be required in order for the burn to proceed. If the AQI for only one of the two stations is posted and is not clearly erroneous, then burn decisions shall be made as described above based upon the AQI from the properly functioning station.
- (b) Rules for assessment of AQI when burning fields located on the Paia (north) side of Kailua Gulch – Fields located on the Paia side (i.e., to the north) of Kailua Gulch are more likely to impact public areas in an around Paia Town and, due to prevailing winds, may also impact public areas outside of Paia. Therefore, data from all three air monitoring stations (Kihei, Kahului, and Paia) shall be considered prior to burning

these fields. The following limitations on burning shall be adhered to for all burns in fields located on the Paia side of Kailua Gulch.

- i. If the AQI at all three air monitoring stations (Kihei, Kahului and Paia) is in the “good” range (indicating air quality meets state and federal standards), burning may be conducted as normal in compliance with all other applicable permit requirements.
 - ii. If the AQI at one or more of the three air monitoring stations is within the “moderate” range (indicating air quality meets state and federal standards) and the AQI at the remaining station(s) is in either the “good” or “moderate” range, then additional caution shall be exercised to avoid burning under marginal conditions which could result in further degradation of the AQI or an exceedance of the 1-hour average PM2.5 limit specified in paragraph B.(1).(d). The Harvesting Manager shall evaluate whether predicted conditions for vog, dispersion and/or other meteorological conditions are marginal and may warrant calling a voluntary “no burn”. Burning when the AQI is in the “moderate” range shall be conducted in compliance with all other applicable permit requirements.
 - iii. If the AQI at any one of the three air monitoring station falls within any “unhealthy” range, no burning shall be conducted until air quality improves and the AQI at all three stations is again within the “good” or “moderate” range.
 - iv. If the AIRNow website is not functioning, no current AQI is posted for any of the three monitoring stations, or the AQI for all three stations is clearly erroneous at the time that the website is checked, then no assessment of the AQI shall be required in order for the burn to proceed. If the AQI for only one or two of the three stations is posted and is not clearly erroneous, then burn decisions shall be made as described above based upon the AQI from the properly functioning station(s).
- (c) When the AQI has been checked on the AIRNow website, the time that the website was checked shall be recorded on the Pre-Burn Checklist (Attachment 1d). In addition, to document the AQI observed just prior to the burn, the person checking the website shall save and print a “screen shot” of the web page for each of the three monitoring stations (Kihei, Kahului and Paia) at the time the AQI was checked. The printed “screen shots” shall be retained as part of the burn records required under Section D of this Exhibit 1. All three “screen shots” shall be taken regardless of the burn location and even if the web page indicates “No Data Available”.

(Note: The AQI updates approximately hourly using data from the Department of Health’s air quality monitoring stations. In some cases, more than one hour may elapse between updates. For this reason, it is possible that the “Last Update” time that appears on the web page “screen shot” may be more than one hour prior to the burn time even

when the site was checked within one hour of the burn time. Therefore, the time that the AQI was checked must also be recorded on the Pre-Burn Checklist.)

- (d) The AIRNow website and the Kihei, Kahului, and Paia air quality monitoring stations are maintained by government agencies and HC&S has no control over the continued availability of the data they provide. In the event that operation of the AIRNow website or any of the Kihei, Kahului or Paia air quality monitoring stations is discontinued, or the information available from these sources is significantly changed or the format modified such that compliance with this provision is not feasible, then compliance with this provision of Exhibit 1 shall no longer be required as part of the pre-burn assessment. HC&S shall retain the flexibility to evaluate whether a new or modified air quality forecasting tool is sufficiently reliable and suitable for incorporation into its pre-burn assessment procedures.

(10) Assessment of plantation stability

- (a) Plantation stability provides an indication of the atmospheric temperature gradient between representative weather station pairs at differing elevations in “windward” and “leeward” regions of the plantation. Stability ratings range from “good” to “no burn”; the corresponding stability index ranges from 5 (best) to 0 (worst) and indicates the relative strength of the stability rating. These ratings can provide an important indication of whether atmospheric stability will be conducive to good smoke dispersion.
- (b) The daily WWG forecast shall include plantation stability ratings and a corresponding stability index for both “windward” and “leeward” regions at the time of the forecast. The forecast shall also specify whether the “windward” or “leeward” stability ratings, or both, are to be considered when burning a particular field on a particular day.
- (c) Plantation stability ratings are updated approximately hourly and can be accessed via a WWG web application so that they can be assessed in “real time” immediately prior to the burn.
- (d) Within one hour prior to the start of the burn, the Harvesting Manager (or his designee) shall check the most recent real-time plantation stability data provided by WWG and shall save and print a “screen shot” of the web page. The printed “screen shot” shall be retained as part of the burn records required under Section D of this Exhibit 1. (Note that because the stability data are updated approximately hourly, the stability data in the printed “screen shot” will not necessarily correspond to a time within one hour of the start of the burn.)
- (e) Prior to burning, the Harvesting Manager shall assess whether real-time stability conditions, in combination with other meteorological observations, are favorable for burning, and shall also compare real-time stability to plantation stability as recorded on the daily WWG forecast to assess whether stability conditions are improving or

deteriorating. In making the burn decision, real-time stability data shall be evaluated as follows:

- i. If all stability ratings for the specified region(s) are in the “fair” (stability index 2 through 4) or “good” (stability index 5) range, then stability shall be considered along with other available information to determine whether or not burning should proceed.
- ii. When any stability rating for the specified region(s) is in the “fair” range, then special attention shall be paid to the stability index to determine whether conditions are closer to “marginal” or to “good”.
- iii. If any stability rating for the specified region(s) is in the “marginal” range (stability index 1), then extra caution shall be exercised when making the burn decision, particularly if other conditions for burning are also marginal. Under these circumstances, special attention shall be paid to whether stability conditions are improving or deteriorating.
- iv. If any stability rating for the specified region(s) is in the “no burn” range (stability index 0), burning shall be delayed until conditions improve (i.e., until no stability rating for the specified region is in the “no burn” range and other conditions are favorable for burning).
- v. In the event that real-time stability data are not available within one hour of the burn, burn decisions shall instead be made based on the plantation stability data from the WWG daily forecast. Exception: For burns conducted after 9:00 AM, the forecast plantation stability data will not reflect actual conditions and therefore need not be considered.

(11) Inspection and removal of unauthorized materials - An inspection shall be conducted of all accessible areas of each field prior to burning. Any batteries, abandoned vehicles, factory wastes, tires, petroleum products, appliances, furniture, hazardous wastes, 55-gallon drums, or other similar items which may have been deposited in the burn area and which are identified during the inspection shall be removed from the burn area prior to any burn. Any logs greater than four inches in diameter which may have been deposited in the burn area and which are identified during the inspection, with the exception of those from any plants found growing in the field, shall be removed from the burn area prior to any burn. Inspections will normally be conducted during cutting of firebreaks within one day of the scheduled burn.

(12) Protection of irrigation system infrastructure - Drip irrigation systems are installed in each field, consisting of buried PVC irrigation mainlines and above-ground irrigation system risers in valve lines located along field edges, subsurface polyethylene drip tubing used to apply water to the crop, and polyethylene oval hose used to supply water from the risers to the drip tubing at the field edges. Permanently installed PVC piping is expensive and time-

consuming to replace, so extensive efforts are made to protect these irrigation system components from damage during harvesting. Prior to each burn, action shall be taken as follows to minimize the potential for accidental damage or burning of irrigation infrastructure:

- Except at field edges where it connects to the remainder of the irrigation system, the majority of drip irrigation tubing is buried during installation and is thereby protected from burning.
- Once irrigation of the field has been halted in preparation for harvest, oval tubing located at the field edges shall be disconnected and pulled from the field prior to the field being burned.
- During preparation for burning, sugarcane at the field edges shall be pushed into the fields, away from the irrigation riser line, to create a “fire line” in order to prevent damage to or destruction of the irrigation risers when the field is burned. “Fire line” cane may also be hauled out of the field rather than pushed into the field, or the field edge may be “notched” (i.e., cane pushed or hauled out only in the area around each riser) to protect the irrigation risers. Alternate means of protecting the risers may be developed and employed, provided that they are equally effective at preventing the risers from burning.

B. Actions to be taken during the burn:

- (1) Monitoring and recordkeeping (Primary Burn Monitor) – The Harvesting Manager shall designate a Primary Burn Monitor to monitor each burn and document meteorological conditions and plume behavior, including any visible smoke impacts in public areas. The Harvesting Manager shall ensure that the burn is not initiated until the Primary Burn Monitor is present. If necessary, the Burn Monitor shall follow the smoke plume to determine the extent of any ground level visible smoke impacts in public areas. In addition to recording observations of the burn, the Burn Monitor shall take a photograph during each observation, when practicable (for example, photos shall not be required when precluded by darkness).
 - (a) Duration of Monitoring - The Primary Burn Monitor shall commence monitoring at the start of the burn and shall continue to monitor the burn and record observations until ALL of the following conditions have been met:
 - i. A minimum of one hour has passed from the time the burn was completed (i.e., all flames were extinguished); AND
 - ii. Any ground level visible smoke impacts to public areas have dissipated; AND
 - iii. All other visible smoke has either dissipated or has passed out to sea or sufficiently beyond public areas such that it is unlikely to drift over or into public areas under existing or reasonably anticipated meteorological conditions.

Additionally, monitoring should be resumed if warranted under Section B.(1).(e) below.

(b) Burn Monitor Log – The Primary Burn Monitor shall record the following information on the Burn Monitor Log (Attachment 1e) for each burn:

- The number of the field to be burned, the number of crop acres burned, and the applicable Exhibit number (2 or 3)
- The date and time the burn was started and the wind speed and direction at the burn site at the start of the burn
- The smoke pattern exhibited by the plume throughout the burn; a listing of smoke pattern codes is included as Attachment 1f
- Any significant shifts in wind speed and direction which occur during the burn
- A description of any observed smoke impacts in public areas, including a Public Impact Code from “0” (no evidence of smoke in the area) to “7” (very heavy smoke); a listing of Public Impact Codes is provided in Section B.(1)(c) below
- The date and time the burn was completed (i.e., date and time when all flames have been extinguished) and the wind speed and direction at the burn site at the end of the burn
- The time that the photograph of each observation was taken (all photographs shall be appended to the Burn Monitor Log)
- Whether or not visible smoke was observed in any area to which the public has unrestricted access and, if so, the time that the Harvesting Manager or Harvesting Supervisor in charge of the burn was notified
- Whether or not the recorded average ambient air concentration of fine particulate matter (PM_{2.5}) exceeded 115 micrograms per cubic meter at any Department of Health Maui ambient air quality monitoring station during any one-hour averaging period which in any part falls between the burn start time and four hours after the burn end time
- The signed Burn Monitor certification

(c) Formatting of Photographs – All photographs taken in support of burn monitoring conducted under this section shall be retained in an electronic format and shall include:

- A date and time stamp; and
- Global Positioning System (GPS) coordinates (latitude and longitude) for the location from which the photograph was taken.

GPS coordinates are intended to assist the Department of Health in confirming visibility distances used to assign Public Impact Codes.

(d) Public Impact Codes – For each observation of smoke impacts in public areas, the Burn Monitor shall assign the appropriate Public Impact Code as described below.

Visible ground level smoke entering any residence, business, or public areas, with the exception of smoke impacts to roadways and/or the Kahului Airport resulting from the burning of fields listed in Exhibit 2, or smoke impacts from malicious fires, brush fires, or other fires not caused by HC&S, shall not exceed a Public Impact Code of 3, as described below.

| Code | Description |
|------|---|
| 0 | - No smoke impacts observed |
| 1 | - No visual impairment - Slight odor of smoke |
| 2 | - Visible smoke present - Odor may or may not be present |
| 3 | - Visible smoke with some visual impairment - Visibility greater than 500 feet (may include periods of less than 500 feet visibility lasting no more than one minute) |
| 4 | - Visual impairment - Visibility less than 500 feet intermittently (for periods of one to two minutes) - Regardless of any visible smoke impacts observed by the Burn Monitor , recorded average ambient air concentration of fine particulate matter (PM _{2.5}) exceeds 115 µg/m ³ at any Department of Health Maui ambient air quality monitoring station during any one-hour averaging period which in any part falls between the burn start time and four hours after the burn end time |
| 5 | - Heavy smoke - Poor visibility, steadily 100 to 500 feet |
| 6 | - Heavy smoke - Visibility less than 100 feet |
| 7 | - Very heavy smoke - No visibility |

When a Public Impact Code of 4 is assigned based upon the post-burn evaluation of air quality impacts conducted under Section C.(3), the Burn Monitor shall circle "YES" in the appropriate box at the top of the Burn Monitor Log.

- (e) Maui Vortex - The WWG forecast includes a prediction of whether formation of a characteristic circulating wind pattern near the southern edge of the plantation, called the "Maui vortex", is likely to occur. The Maui vortex can impact downwind dispersion of smoke from the burn. When formation of the Maui vortex is predicted by the WWG forecast and meteorological conditions during the burn include slow or stagnant winds (ground level winds less than five miles per hour), the Burn Monitor shall monitor wind conditions in the vicinity of the vortex after completion of the burn for indications of vortex formation. Monitoring of wind conditions shall include observing wind data from the Kihei, Field 415, and Kula Ag Park stations. The Burn Monitor shall resume monitoring for ground level smoke impacts if such impacts are anticipated to result from vortex formation.
- (f) Back-Up Burn Monitor – All burns shall be monitored by at least one back-up Burn Monitor in addition to the Primary Burn Monitor described above. The Harvesting Manager shall ensure that the burn is not initiated until all required Burn Monitors are

present, and shall ensure their activities are coordinated throughout the burn to maximize the area monitored for smoke impacts and to minimize duplicative monitoring. The Back-Up Burn Monitor shall monitor throughout the burn as specified in paragraph B.(1).(a) above, and shall record the following information on a separate Burn Monitor Log from that maintained by the Primary Burn Monitor:

- The number of the field to be burned, the number of acres burned, and the applicable Exhibit number (2 or 3)
- The initials of the Back-Up Burn Monitor (record at top of log sheet)
- The date and times the burn was started and completed
- A description of any observed smoke impacts in public areas, including a Public Impact Code from “0” (no evidence of smoke in the area) to “7” (very heavy smoke); a listing of Public Impact Codes is provided in Section B.(1)(c)
- The time that the photograph of each observation was taken (all photographs shall be appended to the Burn Monitor Log)
- Whether or not visible smoke was observed in any area to which the public has unrestricted access and, if so, the time that the Harvesting Manager or Harvesting Supervisor in charge of the burn was notified
- The signed Burn Monitor certification

For each photograph taken by a Back-Up Burn Monitor, the electronic file name shall include the initials of the monitor in order to differentiate the photos from those of other Burn Monitors.

- (g) Under certain circumstances, HC&S may choose to conduct special burn monitoring beyond what is specifically required by this Exhibit, using additional personnel besides the minimum required two Burn Monitors, in order to better document conditions during and after the burn. When conducted, such special monitoring should be recorded on a separate Burn Monitor Log for the subject burn. Documentation of special burn monitoring should include the same information as is specified above for the Back-Up Burn Monitor.
- (h) For burns where a school is located within three miles directly downwind of the field being burned, the school is in session on the day of the burn, and the burn will not be completed at least one hour prior to the start of school, burn monitoring in the area around the school(s) shall be mandatory. Such monitoring may be conducted by the Back-Up Burn Monitor, or an additional, special burn monitor may be assigned. Monitoring shall occur at or near the downwind school(s) triggering this monitoring or, when multiple schools are within the designated downwind area, shall occur in the general area of the potentially impacted schools. Where it is practicable to do so, a single additional burn monitor may be employed to monitor the designated area. When monitoring is required by this section, it shall continue throughout the burn as specified in paragraph B.(1).(a) above. Termination of burn monitoring for schools shall be coordinated with the Primary Burn Monitor.

- (i) Enhanced Monitoring of Smoke Impacts in Public Areas – With the exception of smoke impacts to roadways or the Kahului Airport resulting from burning of fields in accordance with Exhibit 2, in the event that any ground level visible smoke corresponding to a Public Impact Code of 3 is observed entering any residence, business, or public area, enhanced burn monitoring and recordkeeping may be conducted in accordance with this section. If such enhanced monitoring is triggered by a Public Impact Code of 3 but is not conducted, then a Public Impact Code of 4 shall be assigned.
- i. Condition 11 of the permit, with limited exceptions, prohibits ground level smoke impacts from exceeding a Public Impact Code of 3 in public areas. The purpose of this enhanced monitoring is to provide verifiable documentation that will assist the Department of Health in differentiating a Public Impact Code of 3 from a Public Impact Code of 4, and will thereby facilitate enforcement of Condition 11 of the burn permit. Therefore, if a Public Impact Code of 4 or higher is observed and assigned on the Burn Monitor Log, enhanced monitoring serves no useful purpose and is not required.
 - ii. Per Attachment 1f, a Public Impact Code of 3 corresponds to “visible smoke with some visual impairment” where visibility is greater than 500 feet (or where visibility is 500 feet or less intermittently for periods of less than one minute). A Public Impact Code of 4 corresponds to “visual impairment” where visibility is 500 feet or less intermittently for periods of one to two minutes. Thus, the difference between a Public Impact Code of 3 and a Public Impact Code of 4 is that Code 3 impacts include extremely transient puffs of smoke which pass through an area and temporarily reduce visibility for less than a minute whereas Code 4 impacts are of longer duration (and therefore have greater potential to impact the public).
 - iii. Upon observing ground level visible smoke corresponding to a Public Impact Code of 3 entering any residence, business, or public area (except as specified above for Exhibit 2 fields), the Burn Monitor shall promptly take a time stamped photograph of the impacted area, when practicable based on lighting conditions, and shall make a corresponding entry in the Burn Monitor Log.
 - iv. In addition to the information normally required under Section B.(1)(a) above, entries in the Burn Monitor Log required by this section shall include:
 - Identification of one or more visual landmarks in the photograph and of the measured distance between the photographer and the landmark (e.g., “distance to stop sign at right is 550 feet”). Visibility permitting, the distance to the landmark should be at least 500 feet. This information can be used by the Department of Health to establish the extent of visibility impairment depicted in the photograph.
 - The period of time, in minutes, that visibility of 500 feet or less was observed in any public area (other than on roads or at the Kahului Airport as excepted

above), either continuously or intermittently. This information must be recorded in the "Minutes Visual Impairment" box on the Burn Monitor Log, whether or not lighting conditions are sufficient to allow a photograph to be taken. This information can be used by the Department of Health to establish the duration of visibility impairment.

- v. The Burn Monitor shall remain within the area of observed visual impairment and shall continue to take photographs, as practicable, at intervals of no more than one minute until the smoke has cleared sufficiently to reduce the Public Impact Code to 2 or less, at which time enhanced monitoring under this section may be discontinued. All such photographs shall be documented in the Burn Monitor Log as described above and can be used by the Department of Health to establish the duration of visibility impairment depicted in the photographs.
- vi. The Burn Monitor shall assign a Public Impact Code of 4 (or higher, if applicable) to an observation in the event that the Burn Monitor:
 - During enhanced monitoring required under this section obtains two photographs, spaced at least one minute apart, depicting visibility of 500 feet or less in a public area (except as specified above for Exhibit 2 fields); or
 - Otherwise observes, at any time (except as specified above for Exhibit 2 fields), visibility in a public area to be 500 feet or less as a result of smoke impacts for a period of one minute or more, either continuously or intermittently; or
 - Fails to conduct enhanced monitoring triggered by a Public Impact Code of 3.
- vii. The enhanced monitoring requirements of this section shall not apply to smoke impacts to roadways or the Kahului Airport resulting from burning of fields in accordance with Exhibit 2.

(2) Suspension of burns due to smoke impacts

- (a) In the event that any ground level visible smoke is observed entering any residence, business, or public area (conditions corresponding to a Public Impact Code of 2 or greater) during or after a burn, the Burn Monitor shall immediately notify the Harvesting Manager or the Harvesting Supervisor in charge of the burn. The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that no additional burns are conducted that day which would impact the affected area until meteorological conditions improve. (Note: This requirement shall not apply to fields burned in accordance with Exhibit 2 where ground level smoke impacts are limited to public roads or the airport.)
- (b) In the event that the recorded average fine particulate matter (PM_{2.5}) concentration at any of the Department of Health Maui air monitoring stations exceeds 115 micrograms per cubic meter during any one-hour averaging period which in any part falls between

the burn start time and four hours after the burn end time, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall ensure that no additional burns are conducted that day.

- (c) If a subsequent burn is scheduled to occur before the evaluation required under Section C.(3) can be completed for the earlier burn (e.g., the subsequent burn will occur within four hours after the end of the earlier burn), monitoring data available up to the scheduled burn time shall be evaluated and the requirements of Section B.(3)(b) shall be met before the subsequent burn can proceed.
- (3) Resumption of burning after visible smoke impacts – When smoke impacts to public areas warrant that no additional burns should be conducted which would impact the affected area until meteorological conditions improve (per Section B.(2) above), additional burns may be conducted on the same day only after ALL of the following conditions have been met:
- (a) Smoke impacts to public areas from the earlier burn (other than smoke impacts to public roads and/or the airport from burning an Exhibit 2 field) did not exceed a Public Impact Code of 3.
- (b) Either the assessment of air quality impacts required under Section C.(3) has been completed OR the assessment of air quality required under Section A.(9) has determined that the Air Quality Index at the Kihei, Kahului, and/or Paia air monitoring stations (as applicable per Section A.(9)(a) and (b)) is in the “good” range.
- (c) The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) has determined that conditions under which any subsequent burns would be conducted are unlikely to result in visible smoke impacts to the same public area(s) affected by the earlier burn. (Note: This requirement shall not apply to smoke impacts to public roads and/or the airport from burning an Exhibit 2 field.). For the purposes of this section, “the same public area(s)” refers to discrete communities/towns (e.g., Maalaea, North Kihei, South Kihei, Paia, Kahului, Wailuku, Pukalani, etc.) as opposed to just a slightly different locale or neighborhood within the same community.
- (d) The Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) has documented the determination required under Section B.(3)(b) above on a Burn Justification Log (Attachment 1g). Documentation shall include:
- The time and location of the original burn;
 - Identification of any public areas that were impacted by ground level visible smoke as a result of the burn and a description of the smoke impacts (e.g., duration, Public Impact Code);
 - The planned location of any subsequent burns to be conducted on the same day;

- A description of any problems encountered during the initial burn which may have contributed to ground level smoke in public areas;
- Corrective actions or preventative measures implemented to address problems identified during the initial burn;
- Any changes in meteorological or field conditions since the initial burn that are expected to improve smoke dispersion; and
- Identification of downwind areas most likely to be impacted by the next burn.

(e) The Harvesting Manager or Harvesting Supervisor in charge of the burn has notified the Department of Health by telephone of the intent to conduct additional burns.

(4) Attendance to fires and conduct of burns - The date, time, and acreage to be burned shall be determined by the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work). The Harvesting Supervisor at the burn site shall be responsible for controlling the burn and shall assign men and equipment to the burn as necessary depending upon wind conditions, field location, dryness of the surrounding area, and proximity to public areas. A supervisor shall remain at the burn site until all flames are extinguished and smoke emissions are minimized.

(a) Controlling fires - Fire breaks are used to isolate the specific area of cane to be harvested and are cleared prior to burning. The size and location of firebreaks will be determined by the Harvesting Supervisor depending upon field location and wind conditions. Under normal conditions, a 15-foot wide firebreak will be cleared; however, a firebreak up to 50 feet wide may be cleared to avoid a “jump fire” into standing cane, rangeland, or nearby structures. In fields immediately adjacent to residences, firebreaks shall be adequate to protect adjacent property and the area surrounding the acreage to be burned shall be watered down prior to burning. In the event that the field is too close to residences or other structures to be safely burned, a portion of the field shall be harvested unburned.

When burning adjacent to seed fields, the Harvesting Supervisor at the burn site shall ensure that downwind seed fields are monitored to ensure timely detection and response in the event of a jump fire. Additionally, to the extent feasible without hampering equipment access, increased wetting of adjacent seed fields shall be conducted prior to burning upwind fields.

The Harvesting Supervisor at the burn site shall determine the speed and direction of burning by controlling firing of the field, utilizing backfire techniques, and remaining alert to changes in wind conditions. Water trucks and firebreak equipment shall be maintained at the burn site during the burn to help prevent uncontrolled fires.

(b) Contingency Plans - Training in dealing with contingencies shall be a part of the Harvesting Department’s continuing training program. In the event of a “jump fire” or other unforeseen accident, the following steps shall be taken:

- Notify the Fire Department and Police Department
 - Dispatch additional water trucks and rakes to the burn site
 - Notify all harvesting crews to assist in dealing with the emergency
 - Complete additional notifications and actions required under the plantation fire protection manual as necessary.
- (c) Variable Winds - Burning in the Pulehu area can be hazardous due to highly variable wind conditions during the day and the proximity to frequently dry rangelands. HC&S may request approval from the Department of Health to burn certain fields in this area during early morning hours (0400 to 0600) to take advantage of more consistent downslope drainage winds. However, such early morning burns shall only be conducted under meteorological conditions that will also minimize smoke impacts on public areas. If such conditions cannot be met during early morning hours, then normal daytime burns in these areas will be required.
- (d) Minimizing Smoke Impacts - Only controllable amounts shall be burned and under conditions that will minimize ground level visible smoke from entering any nearby building, public road, highway, beach, or any area to which the public has unrestricted access. With the exception of smoke impacts to roadways and/or the Kahului airport resulting from the burning of fields listed in Exhibit 2 and smoke impacts from fires not caused by the permittee (e.g., malicious fires, brush fires), ground level visible smoke entering any residence, business, or public areas shall not exceed a Public Impact Code of three (3), as determined by the HC&S Burn Monitor or by DOH staff.
- (e) Size of Burns – To help ensure that fields are burned only in controllable amounts, no single burn shall exceed 100 acres in crop area. This upper limit is intended as a maximum only. Burning in smaller amounts may be necessary in order to ensure compliance with requirements of Section B.(4)(d) for minimizing smoke impacts. The Harvesting Manager is responsible for determining, after careful consideration of all relevant information, the appropriate size of the burn consistent with the requirement to burn only in controllable amounts and under conditions that will minimize ground level smoke from entering any nearby building, public road, highway, beach, or other area to which the public has unrestricted access. For purposes of compliance with this condition, a “single burn” shall encompass all crop areas which are burned simultaneously, whether or not the burned areas are contiguous.

For each burn, the Harvesting Manager shall ensure that the crop area (in acres) planned to be burned is determined prior to the start of the burn and that it shall not exceed 100 acres. Since the actual area burned may differ from the area planned to be burned, the Harvesting Manager shall also ensure that the actual crop area burned (in acres) is accurately determined after the burn is completed. The *actual crop area burned*, as determined by the Harvesting Supervisor in charge of the burn, shall be recorded on the Burn Monitor Log at the conclusion of the burn. The actual crop area burned does not include wasteland, rock piles, or gulch edges which are not intended to be included in

the burn area but may have partially burned incidental to the cane burn, nor does it include non-crop areas impacted by jump fires.

C. Actions to be taken at the completion of the burn:

- (1) Extinguishing flames and minimizing smoke impacts – The following measures shall be implemented to minimize the potential for ground level smoke impacts to public areas due to smoldering.
- (a) A supervisor shall remain at the burn site until all flames are extinguished and smoke emissions are minimized. After the fire has burned out (i.e., all flames have been extinguished), personnel and equipment shall remain in the field as necessary to minimize smoke emissions from smoldering piles.
 - (b) Water wagons shall be used to extinguish smoldering piles and, if necessary, rakes and cranes shall be used to break up the smoldering piles. These “mop up” operations shall be completed within two hours after the end of the burn and repeated as needed thereafter for compliance with Section C.(1)(d) below.
 - (c) Once emissions following the burn have been reduced to the point where smoke is no longer visible passing beyond HC&S field boundaries and into public areas, equipment may leave the field.
 - (d) The Harvesting Supervisor responsible for the burn shall ensure that the field is checked periodically for flare-ups or excessive smoldering (i.e., smoldering which results in visible smoke passing beyond HC&S field boundaries and into public areas). Periodic checks shall be made at least once per hour during the first four hours following completion of the burn. After that, checks for smoldering shall be made at maximum intervals of four hours. More frequent checks may be made in fields that are located close to public areas.
 - (e) Hourly checks for smoldering shall not be discontinued, or shall be resumed, under the following conditions:
 - i. A flare-up results in flames being observed in the field; or
 - ii. Smoke is observed leaving the field and entering a public area.
- When hourly checks are required beyond the four hours immediately following the end of the burn, they shall continue until smoldering is no longer observed in the field, after which normal monitoring at maximum intervals of four hours may begin.
- (f) Periodic checks for smoldering shall continue until harvesting of the field is completed (i.e., all cane to be harvested has been removed from the field) except that checks may be discontinued sooner if both of the following conditions have been met:

- i. No smoldering has been observed in the field for a period of at least eight hours;
AND
 - ii. At least 36 hours have elapsed since the completion of the burn.
- (g) In the event of a flare-up, water wagons and rakes, if necessary, shall be returned to the field to re-extinguish all flames and smoldering. Action shall be initiated to address flare-ups or excessive smoldering within one hour of discovery.
- (h) Actions taken for compliance with these provisions relating to smoldering shall be documented in the Post-Burn Smoldering Log (Attachment 1h)
- (i) In order to reduce the potential for smoldering piles and resultant ground level smoke after the burn is completed, consideration shall be given during burn preparations to hauling out “fire line” cane (i.e., removing it from the field unburned instead of pushing into the field to be burned) and/or “notching” valve lines (risers) when practicable.
- (2) Clearing of burned fields - To the extent possible, burned cane located closest to adjacent residences, roadways, and other public areas shall be cleared first in order to minimize smoke impacts. Fire line cane will also be hauled out of these areas when possible. Clearing of burned fields shall be done so that the cane is moved away from these sensitive areas whenever possible.
- (3) Post-Burn Evaluation of Air Quality Impacts – Following the completion of each burn, the Harvesting Manager or his designee shall review one-hour average fine particulate matter (PM_{2.5}) monitoring data from each of the Department of Health’s Maui ambient air quality monitoring stations, accessible on-line at the Hawaii Ambient Air Quality Data website, to assess monitored air quality impacts potentially resulting from the burn.
- (a) At minimum, the review shall include all one-hour averaging periods which in any part fall between the burn start time and four hours after the burn end time. (For example, if a burn starts at 1045 and ends at 1130, then the post burn evaluation would include all one hour averaging periods which in any part fall between 1045 and 1530; specifically, the 1100, 1200, 1300, 1400, 1500, and 1600 one-hour averages would be included.)
 - (b) The required evaluation of air quality impacts shall not be considered incomplete or deficient by virtue of the fact that one or more air quality monitoring stations is out of service or not functioning properly, or that data is not timely accessible on the Hawaii Ambient Air Quality Data website. In this event, the evaluation shall be made based on the available data from stations which are in service and properly functioning.
 - (c) In the event that the recorded average fine particulate matter (PM_{2.5}) concentration at any of the monitoring stations exceeds 115 micrograms per cubic meter during any one-hour averaging period which in any part falls between the burn start time and four hours

after the burn end time, a Public Impact Code of 4 shall be assigned to the burn and shall be considered a permit deviation unless determined otherwise by the Department of Health. A Permit Deviation Report Form (Attachment 1k) shall be filed as required under Section D.(2)(b). As with any deviation, the Permit Deviation Report Form must provide a description of any corrective actions or preventative measures implemented to correct the deviation and/or prevent a recurrence, including the date by which corrective actions were or will be implemented.

- (d) If the one-hour fine particulate matter (PM2.5) concentration measured at any of the monitoring stations is believed to have exceeded 115 micrograms per cubic meter due to causes other than the conduct of the scheduled burn, then the Permit Deviation Report Form may include the following:
- Reasons why the elevated PM2.5 concentration is believed not to have been caused by the scheduled burn;
 - A description of other factors which may have contributed to the elevated PM2.5 concentration; and
 - A request for a determination from the Department of Health that the elevated PM2.5 concentration was not caused by the planned burn and therefore does not constitute a permit deviation.

In order for a defensible case to be made regarding the cause of an exceedance of the 115 micrograms per cubic meter limit that is not related to the burn, it is imperative that the Harvesting Manager (or his designee) initiate the post-burn evaluation of air quality impacts as soon as possible after completion of the burn, and that any elevated PM2.5 concentration observed is promptly investigated. Failure to do so may result in an inability to determine the cause of the exceedance.

- (e) A database shall be maintained documenting the evaluation of potential air quality impacts from each burn. At minimum, the following information shall be entered into the database for each burn:
- Field number and acres burned;
 - Date and time of the start and end of the burn, as recorded on the Burn Monitor Log;
 - For each ambient air quality monitoring station, the one-hour PM2.5 concentration reported during the one hour averaging period preceding the start of the burn;
 - For each ambient air quality monitoring station, the average PM2.5 concentration recorded for each one-hour averaging period which in any part falls between the burn start time and four hours after the burn end time;
 - The distance and direction from the field burned to each monitoring station; and
 - A brief summary of smoke plume behavior during the burn (i.e., general direction of the smoke plume relative to the monitoring stations) and an indication of whether or not smoke impacts from the burn were observed by the Burn Monitor in the vicinity of one or more of the monitors.

- When one or more air quality monitoring stations is out of service or not functioning properly, or when data is not timely accessible on the Hawaii Ambient Air Quality Data website, “NA” (for not available) shall be entered in place of the monitoring data along with the date and time access was attempted. One-hour average PM2.5 concentrations are generally posted within 15 minutes after the end of the averaging period; data may be considered “not timely” if it is not accessible on the Hawaii Ambient Air Quality Data website within one hour after the end of the relevant averaging period.
- (f) The Harvesting Manager shall review records of evaluations of post-burn air quality impacts, when available, as part of the pre-burn assessment required under Section A.(4) and shall include air quality impacts from past burns among the information to be considered when making burn decisions.

D. Recordkeeping and Reporting

- (1) **Recordkeeping** – Records shall be maintained as described below for each burn and for each weather station. To help ensure legibility of scanned documents, all records required by this Exhibit 1 shall be completed in pen. All records, including supporting information, shall be maintained in a true, accurate, and permanent form suitable for inspection, retained for a minimum of three (3) years from the date of such records, and made available to the Department of Health or their representative(s) upon request.
- (a) **Pre-Burn Checklist (Attachment 1d)** - For each burn, a Pre-Burn Checklist shall be completed. This checklist documents the completion of all pre-burn inspections, notifications, and other requirements that are mandatory for every field. Prior to each burn, the Harvesting Manager (or a person designated as Acting Harvesting Manager when the Harvesting Manager is sick, on vacation, or otherwise absent from work) shall verify that all pre-burn procedures under Exhibit 1 and either Exhibit 2 or Exhibit 3, as applicable, have been completed for the field being burned and shall so certify by signing the Pre-Burn Checklist. The completed checklist for each burn shall be maintained in the harvesting records.
- (b) **Exhibit 2/Exhibit 3 Checklist** – For each burn, either an Exhibit 2 Checklist (for fields where smoke impacts to certain public areas, such as roads and airports, cannot be avoided) or an Exhibit 3 Checklist (for all other fields) shall be completed. This checklist documents additional, field-specific requirements for each burn. For each burn, the Harvesting Supervisor in charge of the burn shall verify that all burn procedures under Exhibit 2 or Exhibit 3, as applicable, have been completed for the field being burned and shall so certify by signing the Exhibit 2 or Exhibit 3 Checklist. The completed checklist for each burn shall be maintained in the harvesting records.
- (c) **Burn Monitor Log (Attachment 1e)** – For each burn, the burn location, start and end times, wind speed and direction, and information on smoke plume behavior and smoke impacts throughout the burn shall be recorded on the Burn Monitor Log (see additional

details under B.(1)). All photographs taken during burn monitoring shall be appended to and considered part of the Burn Monitor Log; photographs may be maintained in electronic format. The completed Burn Monitor Log for each burn shall be retained in the harvesting records.

- (d) Burn Justification Log (Attachment 1g) – When a burn has resulted in visible smoke impacts to a public area (other than smoke impacts to public roads and/or the airport from burning an Exhibit 2 field), the Harvesting Manager’s determination that a subsequent burn on the same day is not expected to impact the same public area shall be documented on the Burn Justification Log. The Burn Justification Log, when required, shall be retained with the records for the subsequent burn in the harvesting records.
- (e) Post-Burn Smoldering Log (Attachment 1h) – All post-burn field checks for smoldering and associated corrective actions shall be recorded on the Post-Burn Smoldering Log. The completed Post-Burn Smoldering Log shall be retained in the harvesting records.
- (f) Daily Weather and Dispersion Forecast (Attachment 1j), Weather Data – Copies of each daily smoke management weather and dispersion forecast shall be maintained in the harvesting records. A complete record of data output from HC&S weather stations is maintained in the weather computer memory.
- (g) Air Quality Index “Screen Shot” – Copies of each “screen shot” of the EPA AIRNow website taken to document the Air Quality Index observed within one hour prior to each burn shall be maintained in the harvesting records.
- (h) Air Quality Impact Database – A copy of the database of post-burn air quality impacts required under Section C.(3) shall be maintained in the harvesting records.
- (i) Real-Time Stability “Screen Shot” - Copies of each “screen shot” of real-time stability data from the WWG website taken to document the plantation stability observed within one hour prior to each burn shall be maintained in the harvesting records.
- (j) Mixing Height “Screen Shot” - Copies of each “screen shot” of predicted mixing height from the NWS Fire Weather Graphical Products website taken to document the predicted mixing height observed within one hour prior to each burn shall be maintained in the harvesting records.
- (k) Weather Station Maintenance Records – A weather station maintenance log shall be maintained as described in Section D.(3) below.

(2) Reporting

- (a) Weekly Report - Within seven (7) days after the end of each week, the Harvesting Manager or his designee shall submit to the Department of Health Clean Air Branch (Honolulu) a copy of each of the records listed in Section D.(1) above for each burn

conducted during the week. Records may be submitted electronically or by hard copy. For the purposes of this reporting requirement, Friday shall be considered the end of the week.

- (b) Reporting of Deviations – Within five (5) working days after discovery of any deviation from a permit requirement, including the procedures specified in Exhibits 1, 2, and 3 and accompanying attachments, HC&S shall submit a written report to the Department of Health, Clean Air Branch (Honolulu) identifying the deviation, the probable cause, and any corrective actions or preventive measures implemented as a result. The Permit Deviation Report Form (Attachment 1k) shall be used for this purpose, and a copy of each report shall be retained in the harvesting records.

E. Weather station locations and operation

- (1) Locations and data collected - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. Each station provides data on rainfall, wind speed and direction, temperature, and relative humidity. Fixed weather stations are listed in the attached table (Attachment 1i) and locations are shown on the harvest map.
- (2) Mobile station, use of alternate stations - The mobile weather station will normally be located near sensitive downwind areas for each burn. In the event that any weather station specified for use in making burn determinations in Exhibit 2 or 3 is out of service, either the mobile station or the nearest alternate station will be used instead.
- (3) Data readouts, station maintenance - Weather stations provide readouts to a central computer located at the HC&S Main Office. Weather station outputs are also provided directly to Western Weather Group for use in preparing the daily smoke dispersion forecast.

Readouts from each weather station are checked daily during the harvest season and any station that provides readings which appear to be inconsistent or unreasonable is serviced as soon as is practicable to ensure proper operation. Until the malfunctioning station is serviced, the station is flagged so that potentially erroneous data will not be considered when preparing the forecast or making burn decisions.

Each station's sensors are cleaned regularly to ensure optimum performance. Each station undergoes regular inspection and maintenance and is calibrated at least annually in accordance with the Western Weather Group automated weather station calibration procedures to ensure that all sensors operate properly. Calibration includes checks of the data logger, power supply, temperature and humidity sensors, wind speed and direction sensors, solar radiation sensor, and rain gauge, as applicable for the individual weather stations.

All weather station maintenance, repairs, and replacement are documented in a maintenance log. Daily data checks of all stations are documented on a calendar kept as part of the maintenance log.

Attachments to Exhibit 1

- Attachment 1a – Cane Burn Notification Listing
- Attachment 1b – Sample Written Notice
- Attachment 1c – List of Schools Adjacent to HC&S Sugarcane Fields
- Attachment 1d – Pre-Burn Checklist
- Attachment 1e – Burn Monitor Log
- Attachment 1f – Smoke Pattern Codes and Public Impact Codes
- Attachment 1g – Burn Justification Log
- Attachment 1h – Post-Burn Smoldering Log
- Attachment 1i – Listing of Weather Stations
- Attachment 1j – Sample WWG Daily Weather and Dispersion Forecast
- Attachment 1k – Permit Deviation Report Form
- Attachment 1l – Schools Within 2,000 feet of an HC&S Field (Listing and Map)
- Attachment 1m – Churches Abutting HC&S Cane Fields
- Attachment 1n – HC&S Fields Within Three Miles of a School (Map)

CANE BURN NOTIFICATION

Attachment 1a

| <u>FIELD</u> | <u>WRITTEN NOTICE</u> | <u>CALL LIST</u> | <u>HIGHWAY WARNINGS</u> |
|--------------|--|---|---------------------------|
| 100 | OLD MAUI HIGH SCHOOL | PAIA | SIGNS/GUARDS HOLOMUA RD. |
| 101 | | PAIA | |
| 102 | | PAIA | |
| 103 | KUAAU | PAIA/DORIS TODD, PAIA AND ALOHA KAI SCHOOLS | SIGNS/GUARDS BALDWIN AVE. |
| 104 | | PAIA/KUAAU | SIGNS/GUARDS HANA HWY. |
| 105 | | PAIA/KUAAU | SIGNS/GUARDS HANA HWY. |
| 106 | KUAAU | PAIA//DORIS TODD, PAIA AND ALOHA KAI SCHOOLS | SIGNS/GUARDS BALDWIN AVE. |
| 107 | | PAIA/KUAAU | SIGNS/GUARDS HANA HWY. |
| 108 | | KUAAU | SIGNS/GUARDS HANA HWY. |
| 109 | MAKAWAO UNION CHURCH/ALOHA KAI II ACADEMY PRESCHOOL, ADJACENT RESIDENTS | KUAAU | SIGNS/GUARDS BALDWIN AVE. |
| 110 | | PAIA | |
| 111 | | PAIA/ALOHA KAI II ACADEMY | |
| 112 | MAKAWAO UNION CHURCH/ALOHA KAI II ACADEMY PRESCHOOL, ADJACENT RESIDENTS | PAIA | SIGNS/GUARDS BALDWIN AVE. |
| 113 | | PAIA | |
| 114 | | PAIA/KUAAU | |
| 115 | MAUNAOLU/ADJACENT RESIDENTS | PAIA/KUAAU | SIGNS/GUARDS HOLOMUA RD, |
| 116 | | PAIA, MONTESSORI SCHOOL | |
| 117 | | PAIA, MONTESSORI SCHOOL | |
| 118 | MAUNAOLU | PAIA, MONTESSORI SCHOOL | SIGNS/GUARDS BALDWIN AVE. |
| 119 | | PAIA, MONTESSORI SCHOOL | |
| 120 | | PAIA | |
| 200 | HOLY ROSARY CHURCH/ALOHA KAI ACADEMY, ADJACENT RESIDENTS, PAIA SCHOOL, ALOHA KAI II ACADEMY PRESCHOOL/MAKAWAO UNION CHURCH | PAIA, PAIA SCHOOL, ALOHA KAI AND ALOHA KAI II ACADEMY | SIGNS/GUARDS BALDWIN AVE. |
| 201 | PAIA SCHOOL, HOLY ROSARY CHURCH/ALOHA KAI ACADEMY, ADJACENT RESIDENTS | PAIA, PAIA SCHOOL, ALOHA KAI ACADEMY | SIGNS/GUARDS BALDWIN AVE. |
| 202 | | | |
| 203 | | | |
| 204 | DORIS TODD SCHOOL, PAIA SCHOOL, HOLY ROSARY CHURCH/ALOHA KAI ACADEMY, SKILL VILLAGE | PAIA/DORIS TODD, PAIA AND ALOHA KAI SCHOOLS | SIGNS/GUARDS BALDWIN AVE. |
| 205 | | | SIGNS/GUARDS BALDWIN AVE. |
| 206 | | | SIGNS/GUARDS BALDWIN AVE. |
| 207 | HOLY ROSARY CHURCH/SKILL VILLAGE | PAIA | SIGNS/GUARDS BALDWIN AVE. |
| 208 | | | |
| 209 | | | |
| 210 | ADJACENT KUAAU RESIDENTS | PAIA/KUAAU | SIGNS/GUARDS HANA HWY. |
| 211 | LOWER PAIA | PAIA | SIGNS/GUARDS BALDWIN AVE. |

CANE BURN NOTIFICATION

Attachment 1a

| FIELD | WRITTEN NOTICE | CALL LIST | HIGHWAY WARNINGS |
|-------|--|--------------------------|--|
| 212 | ADJACENT RESIDENTS/RINAZAI ZEN MISSION | | SIGNS/GUARDS HANA HWY. |
| 213 | | | |
| 214 | LOWER PAIA | PAIA | |
| 300 | | KAMEHAMEHA SCHOOL | SIGNS/GUARDS HALEAKALA & HAILIIMAILE RD. |
| 301 | | PUKALANI/KAMEHAMEHA SCH. | SIGNS/GUARDS HALEAKALA HWY. |
| 302 | | PUKALANI/KAMEHAMEHA SCH. | |
| 303 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 304 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 305 | | | |
| 306 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 307 | | KAMEHAMEHA SCHOOL | |
| 308 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 309 | | | |
| 310 | | | |
| 311 | | KAMEHAMEHA SCHOOL | |
| 312 | | | |
| 313 | | KAMEHAMEHA SCHOOL | |
| 314 | | | |
| 400 | | | |
| 401 | | KAMEHAMEHA SCHOOL | SIGNS/GUARDS PULEHU ROAD, OMAOPIO ROAD |
| 402 | | | |
| 403 | | | |
| 404 | | | SIGNS/GUARDS PULEHU ROAD |
| 405 | | | SIGNS/GUARDS PULEHU ROAD, OMAOPIO ROAD |
| 406 | | | |
| 407 | | | SIGNS/GUARDS PULEHU ROAD |
| 408 | | | |
| 409 | | | |
| 410 | | | |
| 411 | | KIHEI | |
| 412 | | KIHEI | |
| 413 | | KAMEHAMEHA SCHOOL | SIGNS/GUARDS PULEHU ROAD |
| 414 | | KIHEI | |
| 415 | | KIHEI | |
| 416 | | KIHEI | |
| 417 | | KIHEI | |
| 418 | | KIHEI | |
| 500 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 501 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 502 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 503 | | | |

CANE BURN NOTIFICATION

Attachment 1a

| FIELD | WRITTEN NOTICE | CALL LIST | HIGHWAY WARNINGS |
|-------|--------------------------------|------------------------|------------------------------------|
| 504 | | | |
| 505 | | | SIGNS/GUARDS PULEHU ROAD |
| 506 | | | SIGNS/GUARDS PULEHU ROAD |
| 507 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 508 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 509 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 510 | AMERON QUARRY, COUNTY LANDFILL | | |
| 511 | AMERON QUARRY, COUNTY LANDFILL | | SIGNS/GUARDS PULEHU ROAD |
| 512 | AMERON QUARRY, COUNTY LANDFILL | | |
| 600 | SPRECKELSVILLE | SPRECKELSVILLE | SIGNS/GUARDS HANA HWY. |
| 601 | | AIRPORT | |
| 602 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 603 | | | SIGNS/GUARDS HALEAKALA HWY. |
| 604 | | AIRPORT | SIGNS/GUARDS HALEAKALA & HANA HWY. |
| 605 | | AIRPORT | SIGNS/GUARDS HALEAKALA & HANA HWY. |
| 606 | | AIRPORT | SIGNS/GUARDS PULEHU RD. |
| 607 | | AIRPORT | SIGNS/GUARDS HANA HWY. |
| 608 | | AIRPORT | SIGNS/GUARDS HANA HWY. |
| 609 | | AIRPORT | SIGNS/GUARDS HANA HWY. |
| 610 | | AIRPORT | SIGNS/GUARDS HALEAKALA & HANA HWY. |
| 611 | SPRECKELSVILLE | AIRPORT/SPRECKELSVILLE | SIGNS/GUARDS HANA HWY. |
| 700 | | | SIGNS/GUARDS PULEHU RD. |
| 701 | | | SIGNS/GUARDS PULEHU RD. |
| 702 | | | SIGNS/GUARDS PULEHU RD. |
| 703 | | | |
| 704 | | | |
| 706 | PUUNENE SCHOOL | | SIGNS/GUARDS PULEHU RD. |
| 707 | PUUNENE SCHOOL | | SIGNS/GUARDS MOKULELE HWY. |
| 708 | MAUI HARDWOODS | AIRPORT | SIGNS/GUARDS MOKULELE HWY. |
| 709 | | AIRPORT | SIGNS/GUARDS HANA HWY. |
| 710 | | AIRPORT | SIGNS/GUARDS PULEHU RD. |
| 711 | | AIRPORT | SIGNS/GUARDS HANSEN RD. |
| 712 | | AIRPORT | SIGNS/GUARDS HANSEN RD. |
| 714 | KAAHUMANU HOU SCHOOL | AIRPORT, KAAHUMANU HOU | |
| 715 | | SCHOOL | SIGNS/GUARDS KUIHELANI HWY. |
| 716 | | AIRPORT | SIGNS/GUARDS KUIHELANI HWY. |
| 717 | MAUI HARDWOODS | AIRPORT | SIGNS/GUARDS MOKULELE HWY. |
| 718 | | AIRPORT | SIGNS/GUARDS MOKULELE HWY. |
| 719 | | MAALAEA | SIGNS/GUARDS KUIHELANI |
| 720 | | | SIGNS/GUARDS KUIHELANI |

CANE BURN NOTIFICATION

Attachment 1a

| FIELD | WRITTEN NOTICE | CALL LIST | HIGHWAY WARNINGS |
|-------|--------------------------------------|-----------|---|
| 735 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 737 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 741 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 743 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 745 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 747 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 749 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 751 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 753 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 757 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 761 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 763 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI HIGHWAY |
| 765 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 767 | | MAALAEA | SIGNS/GUARDS HONOAPIILANI & KUIHELANI HWY |
| 800 | | | SIGNS/GUARDS PULEHU RD. |
| 801 | | | |
| 802 | | | |
| 803 | | | |
| 805 | | | |
| 806 | | | |
| 807 | | | |
| 808 | | | |
| 809 | | | |
| 810 | | KIHEI | |
| 811 | | KIHEI | |
| 812 | | KIHEI | |
| 813 | | | |
| 814 | | | |
| 815 | | | |
| 816 | | KIHEI | |
| 817 | | KIHEI | |
| 818 | | | |
| 819 | | KIHEI | |
| 820 | HALE PIILANI/KIHEI VILLAGES SUBDIVS. | KIHEI | |
| 821 | | KIHEI | |
| 822 | | KIHEI | |
| 823 | HALE PIILANI SUBDIVISION | KIHEI | |
| 900 | MAUI HARDWOODS | KIHEI | SIGNS/GUARDS MOKULELE HWY. |
| 901 | HUMANE SOCIETY | | SIGNS/GUARDS MOKULELE HWY. |
| 902 | | | SIGNS/GUARDS MOKULELE HWY. |
| 903 | | | |

CANE BURN NOTIFICATION

Attachment 1a

| <u>FIELD</u> | <u>WRITTEN NOTICE</u> | <u>CALL LIST</u> | <u>HIGHWAY WARNINGS</u> |
|--------------|-----------------------|------------------|-------------------------------|
| 904 | | | |
| 905 | | MAALAEA | |
| 906 | MAALAEA CONDOS | MAALAEA | SIGNS/GUARDS N. KIHAI RD.. |
| 907 | MAALAEA CONDOS | MAALAEA | SIGNS/GUARDS N. KIHAI RD. |
| 908 | | KIHAI | SIGNS/GUARDS MOKULELE HIGHWAY |
| 909 | | KIHAI | |
| 910 | | KIHAI | |
| 911 | | KIHAI | SIGNS/GUARDS MOKULELE HIGHWAY |
| 912 | | KIHAI | SIGNS/GUARDS MOKULELE HWY. |
| 913 | MAALAEA CONDOS | MAALAEA | SIGNS/GUARDS N. KIHAI RD.. |
| 914 | HUMANE SOCIETY | KIHAI | SIGNS/GUARDS MOKULELE HWY. |
| 915 | | KIHAI | SIGNS/GUARDS MOKULELE HWY. |
| 916 | SUGAR BEACH (KIHAI) | KIHAI | SIGNS/GUARDS MOKULELE HWY. |
| 917 | SUGAR BEACH (KIHAI) | KIHAI | SIGNS/GUARDS MOKULELE HWY. |
| 918 | MAALAEA CONDOS | MAALAEA | SIGNS/GUARDS MAALAEA RD. |
| 919 | | MAALAEA | SIGNS/GUARDS KUIHELANI HWY. |
| 920 | | MAALAEA | SIGNS/GUARDS KUIHELANI HWY. |
| 921 | | MAALAEA | SIGNS/GUARDS KUIHELANI HWY. |
| 922 | | MAALAEA | SIGNS/GUARDS KUIHELANI HWY. |

HARVESTING SCHEDULE

This is to inform you that we are harvesting cane in your neighborhood and will be burning the field adjacent to your home at approximately _____ on ' _____.'

The harvesting and subsequent follow-up field operations may cause temporary inconvenience to you and your family. We will do our utmost to speed up the operations and get the field under irrigation as soon as possible to alleviate the dust condition.

Your understanding and patience will be greatly appreciated.

Hawaiian Commercial & Sugar Company

HARVESTING SCHEDULE

This is to inform you that we are harvesting cane in your neighborhood and will be burning the field adjacent to your home at approximately _____ on _____.

The harvesting and subsequent follow-up field operations may cause temporary inconvenience to you and your family. We will do our utmost to speed up the operations and get the field under irrigation as soon as possible to alleviate the dust condition.

Your understanding and patience will be greatly appreciated.

Hawaiian Commercial & Sugar Company

| |
|---|
| List of Schools Adjacent to HC&S Sugar Cane Fields |
|---|

As required by Exhibit 1 to the agricultural burning permit, the following is a list of operating hours for schools located adjacent to HC&S sugar cane fields which could be impacted by smoke from agricultural burning. As required by the permit, burning of fields adjacent to these schools will not be conducted while school is in session or within one hour of the start of school.

| School | Fields | Hours | |
|---|-------------------|-----------|--|
| Doris Todd Memorial Christian Schools (Paia) | 207 | 0730-1415 | after school care to 1730 |
| Kaahumanu Hou School (Puunene Avenue) | 714 | 0800-1630 | no after school or summer programs |
| Paia School (Baldwin Avenue, Paia) | 200 204 207 | 0750-1730 | includes after school program; no summer program |
| Aloha Kai II Academy (formerly known as Annunue Pre-school) (Baldwin Avenue/Makawao Union Church, Paia) | 111 200 | 0715-1715 | no after school program |
| Aloha Kai Academy (Baldwin Avenue/Holy Rosary Church, Paia) | 200 204 207 | 0715-1715 | no after school program |

| Hawaiian Commercial and Sugar Company Pre-Burn Checklist | | | | |
|--|--|-------------|---|---------------------------|
| Field: | Date: | Start Time: | End Time: | Exhibit: 2 3 (circle one) |
| Prior to burning, verify each item below is completed and initial in the space provided. | | | | |
| | Permitted Field: The Harvesting Supervisor in charge of the burn has confirmed that the field planned to be burned is listed on the current Agricultural Burning Permit. (Check against the permit or a certified copy of the harvest schedule.) | | | |
| | "No Burn" Declaration: Contacted Harvesting Manager prior to burn, verified Department of Health has not notified Harvesting Manager of a declared "No Burn" period in effect. | | | |
| | Correct Forms Are Being Used: Field Number on Exhibit 2 or 3 checklist being used matches the number of the field to be burned. Write the field numbers in the boxes below. If the numbers don't match, STOP and rectify the discrepancy before proceeding. | | | |
| | Field number on the Exhibit 2 or Exhibit 3 Checklist being used: | | Number of the field to be burned today: | |
| | Restrictions on Burn Times: All restrictions on burn times will be complied with, including restrictions applicable to schools, churches, roads, airports, and public recreation areas. | | | |
| | Precautions for Schools: Exhibit 1 precautions relating to minimizing impacts on schools have been reviewed and will be complied with, as applicable. Checked Attachments 1c, 1l, and 1n to identify nearby schools. | | | |
| | Burn Justification: If a prior burn was conducted today, Exhibit 1 requirements for suspension of burns, AQI, and resumption/justification of burning after visible smoke impacts will be complied with. Mark "NA" if not applicable. | | | |
| | Vog Forecast: Potential vog impacts assessed. WWG vog forecast is in "green" range or is not available (NA). Do not burn if vog forecast is in "yellow" or "red" range. Circle forecast condition: GREEN GREEN* YELLOW RED NA | | | |
| Time | Air Quality Index: AQI was checked on AirNOW website within one hour of burn and AQI is in "good" or "moderate" range, or is not available (NA). For Paia, circle NR (not required) if the field is located to the south of Kailua Gulch. Record time AQI checked at right and print web page screen. Circle AQI below: Kihei AQI: GOOD - (OK to burn) MODERATE - (burn only with CAUTION) NA OTHER Kahului AQI: GOOD - (OK to burn) MODERATE - (burn only with CAUTION) NA OTHER Paia AQI: NR GOOD - (OK to burn) MODERATE - (burn only with CAUTION) NA OTHER | | | |
| Public Notifications: Make reasonable attempt to complete all notifications specified in the Cane Burn Notification Listing. (For items not specified in the Cane Burn Notification Listing, enter NA in the box.) | | | | |
| | Delivery of written notices to nearby residential premises, churches, schools, and/or businesses (per Cane Burn Notification List) made or attempted at least two days prior to burn. | | | |
| | Telephone notifications to designated call lists (per Cane Burn Notification List) made or attempted at least two hours prior to scheduled burn (check with Burn Monitor to verify completion). | | | |
| | Signs and/or security guards/police posted on affected roadways (per Cane Burn Notification List). | | | |
| Time | Maui Police Central Dispatch and fire station nearest the burn have been notified at least one hour prior to burn (delay start of burn if necessary to meet this pre-notification requirement). Record time of call in box at left. | | | |
| Inspection of Fields: | | | | |
| | Accessible areas of field to be burned have been inspected for materials not authorized to be burned. Unauthorized materials include logs greater than four inches in diameter (unless from plants found growing in the field) and any batteries, abandoned vehicles, factory wastes, tires, petroleum products, hazardous wastes, 55-gallon drums, appliances, furniture, or other similar items. | | | |
| | Any unauthorized materials found during the inspection have been removed from the burn area. | | | |
| | Farm Manager responsible for the field to be burned has confirmed that calcium hypochlorite containers have been removed from areas located in or within 50 feet of the burn area. | | | |
| | Fire line cleared or valve lines notched to prevent inadvertent damage or burning of irrigation risers. | | | |
| | Confirmed oval hose has been removed from along field edges to prevent burning. | | | |
| Assessment of Meteorological Conditions: | | | | |
| | Field number on the WWG smoke management and dispersion forecast matches the field that is to be burned. Write the field numbers in the boxes below. If the numbers don't match, STOP and rectify the discrepancy before proceeding. | | | |
| | Field number on the Western Weather Group Daily Forecast: | | Number of the field to be burned today: | |
| | Weather data, including Western Weather Group smoke management and dispersion forecasts, HC&S weather station data, other applicable weather data, and past burn records reviewed, assessment of likely smoke plume behavior completed. | | | |
| | Existing or predicted meteorological conditions have been evaluated, meet minimum requirements specified for burning, and are anticipated to minimize ground level visible smoke from entering public areas. Check each item considered below: <input type="checkbox"/> Surface Winds <input type="checkbox"/> Transport Winds <input type="checkbox"/> Mixing Height <input type="checkbox"/> Real-Time Stability (circle): WINDWARD LEEWARD | | | |
| | Checked WWG predicted dispersion conditions. Dispersion is predicted to be "fair" or better in field to be burned. Do not burn if "poor" dispersion is predicted. | | | |
| | Checked WWG predicted temperature inversion conditions. No "strong" or "moderate" temperature inversion was predicted for this field at the time of this burn. If a "strong" or "moderate" inversion is predicted at the scheduled burn time, burning must be delayed until the inversion has broken. | | | |
| | Checked field moisture and confirmed field is dry enough to burn. Mat check completed, if required. | | | |
| | Enter inches of rainfall recorded in rain gage (automated or manual) most representative of field conditions: | | | inches |
| Harvesting Manager Certification (Harvesting Manager/Acting Manager must review and sign prior to start of burn): | | | | |
| All pre-burn procedures required for this field under Exhibit 1 and Exhibit 2 or 3, as applicable, have been completed. I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. | | | Signature: | |

Hawaiian Commercial & Sugar Company Burn Monitor Log

| | | | | | | | | |
|---|--|------------------------------|----------------|-----------------------------|--------------------------------------|----------------------------------|-----------------------------|------------------|
| Date: | | Field: | | Actual Acres Burned: | | Exhibit: 2 3 (circle one) | | |
| Burn Monitor (check one): | | <input type="checkbox"/> | Primary | <input type="checkbox"/> | Back-Up (Initials:) | <input type="checkbox"/> | Special (Initials:) | |
| Burn Start Time: | | Wind Speed/Direction: | | | Measured From: | | | |
| Burn End Time: | | Wind Speed/Direction: | | | Measured From: | | | |
| While monitoring this burn, did you observe visible smoke (Public Impact Code ≥ 2) in any residence, business, school, public road, highway, beach, or other area to which the public has unrestricted access? | | | | | | YES | | |
| | | | | | | NO | | |
| Did the recorded 1-hour average ambient air concentration of PM_{2.5} exceed 115 $\mu\text{g}/\text{m}^3$ at any DOH Maui ambient air quality monitoring station within four hours after the burn end time? | | | | | | YES | | |
| | | | | | | NO | | |
| If "YES" was answered to either, notify Harvesting Manager or Harvesting Supervisor and enter time of notification at right. A "YES" response requires that no further burning shall be conducted except when permissible under Exhibit 1. | | | | | | Time: _____ | | |
| I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. | | | | | Signature of Burn Monitor: | | | |
| Record smoke observations made during the burn below. If visible smoke is observed, indicate extent and duration of visible smoke. | | | | | | | | |
| Time: | | Location: | | | Wind Speed/Direction: | | | |
| Observations: | | | | | Smoke Plume Code: | | | |
| | | | | | Public Impact Code: | | | |
| | | | | | Minutes Visual Impairment: | | | |
| | | | | | <u>Public Areas Impacted</u> | | | |
| | | | | | Roads/Highways: | | | |
| | | | | | Residential/Commercial/Other: | | | |
| <small>Note: When required by Exhibit 1, record distance to a visible object in photo and document (including sequential photos, if feasible) the duration (in minutes) of visibility < 500 feet.</small> | | | | | | | | |
| Photo Taken | | Check box at right if | | Time of Photo: | | Start: | End: | Duration: |
| YES NO | | lighting inadequate. | | | | | | |
| Time: | | Location: | | | Wind Speed/Direction: | | | |
| Observations: | | | | | Smoke Plume Code: | | | |
| | | | | | Public Impact Code: | | | |
| | | | | | Minutes Visual Impairment: | | | |
| | | | | | <u>Public Areas Impacted</u> | | | |
| | | | | | Roads/Highways: | | | |
| | | | | | Residential/Commercial/Other: | | | |
| <small>Note: When required by Exhibit 1, record distance to a visible object in photo and document (including sequential photos, if feasible) the duration (in minutes) of visibility < 500 feet.</small> | | | | | | | | |
| Photo Taken | | Check box at right if | | Time of Photo: | | Start: | End: | Duration: |
| YES NO | | lighting inadequate. | | | | | | |

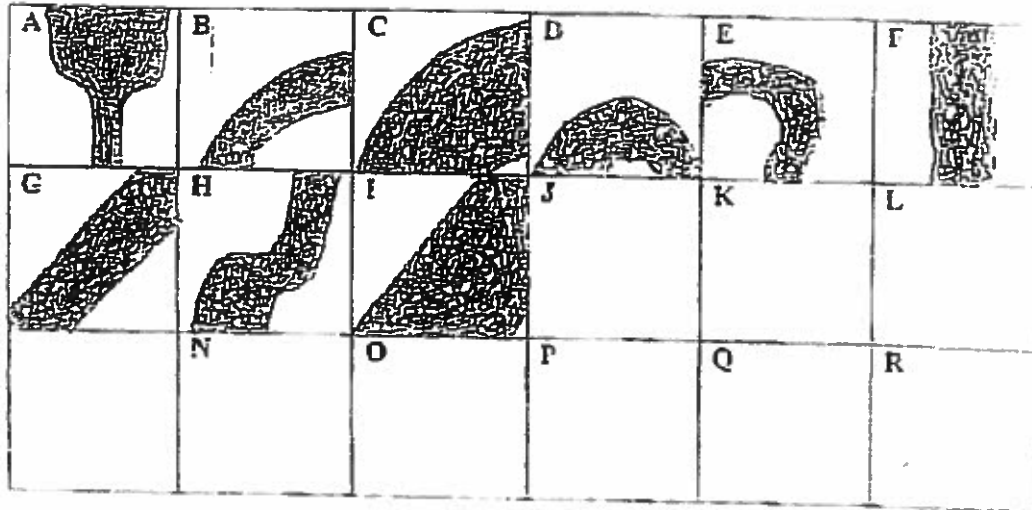
NOTE: THIS IS A TWO PAGE FORM. ATTACH CONTINUATION SHEETS AS NEEDED.

| |
|---|
| Hawaiian Commercial & Sugar Company Burn Monitor Log Continuation Sheet, Page _____ of _____ |
|---|

| | | | | | | | |
|---|--|---|----------------|-----------------------------|--------------------------------------|----------------------------------|-----------------------------|
| Date: | | Field: | | Actual Acres Burned: | | Exhibit: 2 3 (circle one) | |
| Burn Monitor (check one): | | <input type="checkbox"/> | Primary | <input type="checkbox"/> | Back-Up (Initials:) | <input type="checkbox"/> | Special (Initials:) |
| Record smoke observations made during the burn below. If visible smoke is observed, indicate extent and duration of visible smoke. | | | | | | | |
| Time: | | Location: | | | Wind Speed/Direction: | | |
| Observations: | | | | | Smoke Plume Code: | | |
| | | | | | Public Impact Code: | | |
| | | | | | Minutes Visual Impairment: | | |
| | | | | | <u>Public Areas Impacted</u> | | |
| | | | | | Roads/Highways: | | |
| Note: When required by Exhibit 1, record distance to a visible object in photo and document (including sequential photos, if feasible) the duration (in minutes) of visibility < 500 feet. | | | | | Residential/Commercial/Other: | | |
| | | | | | | | |
| Photo Taken YES NO | | Check box at right if lighting inadequate. | | <input type="checkbox"/> | Time of Photo: | | |
| Start: | | End: | | Duration: | | | |
| Time: | | Location: | | | Wind Speed/Direction: | | |
| Observations: | | | | | Smoke Plume Code: | | |
| | | | | | Public Impact Code: | | |
| | | | | | Minutes Visual Impairment: | | |
| | | | | | <u>Public Areas Impacted</u> | | |
| | | | | | Roads/Highways: | | |
| Note: When required by Exhibit 1, record distance to a visible object in photo and document (including sequential photos, if feasible) the duration (in minutes) of visibility < 500 feet. | | | | | Residential/Commercial/Other: | | |
| | | | | | | | |
| Photo Taken YES NO | | Check box at right if lighting inadequate. | | <input type="checkbox"/> | Time of Photo: | | |
| Start: | | End: | | Duration: | | | |

ATTACH ADDITIONAL CONTINUATION SHEETS AS NEEDED

SMOKE PATTERN CODES



| Public Impact Codes | |
|---------------------|---|
| Code | Description |
| 0 | - No smoke impacts observed |
| 1 | - No visual impairment - Slight odor of smoke |
| 2 | - Visible smoke present - Odor may or may not be present |
| 3 | - Visible smoke with some visual impairment - Visibility greater than 500 feet (may include periods of less than 500 feet visibility lasting no more than one minute) |
| 4 | - Visual impairment - Visibility less than 500 feet intermittently (for periods of one to two minutes) - Regardless of any visible smoke impacts observed by the Burn Monitor , recorded average ambient air concentration of fine particulate matter (PM _{2.5}) exceeds 115 µg/m ³ at any Department of Health Maui ambient air quality monitoring station during any one-hour averaging period which in any part falls between the burn start time and four hours after the burn end time |
| 5 | - Heavy smoke - Poor visibility, steadily 100 to 500 feet |
| 6 | - Heavy smoke - Visibility less than 100 feet |
| 7 | - Very heavy smoke - No visibility |

**Hawaiian Commercial & Sugar Company
Burn Justification Log**

Completion of this form is required prior to conducting additional burns after a previous burn conducted on the same day has resulted in visible smoke impacts (Public Impact Code of two (2) or greater) to a public area other than smoke impacts to a public road or to the Kahului airport resulting from burning an Exhibit 2 field. The Harvesting Manager or his designee must complete and sign this form to document his/her determination that conditions under which any subsequent burns would be conducted are unlikely to result in visible smoke impacts to the same public area(s) affected by the earlier burn.

Provide the following information regarding the original burn:

Field: Acres Burned: Time of Burn:

What public areas were impacted by visible smoke as a result of this burn (other than roads, airport from Exhibit 2 fields)?

Describe the visible smoke impacts from this burn (extent, duration, public impact code).

Describe any problems encountered during this burn which may have contributed to ground level visible smoke in public areas (e.g., unexpected changes in wind conditions, unexpected temperature inversion, dispersion not as predicted, unexpected rainfall, field wetter than anticipated, unanticipated delays in firing field, etc.).

Provide the following information for the proposed additional burn:

Field: Acres to Be Burned: Planned Time of Burn:

What corrective actions or preventative measures, if any, have been implemented to address problems encountered during the earlier burn in an effort to reduce visible smoke impacts (if none, explain)?

Describe any changes in meteorological conditions or differences in field conditions since the earlier burn that are expected to improve smoke dispersion and reduce the potential for smoke impacts to the same area.

Identify public areas downwind of the planned burn that are most likely to be impacted in the event of inadequate smoke dispersion.

Notify the Department of Health by telephone of the intent to conduct additional burns.

Call time: Name of person who took call:

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Name (Harvesting Manager or designee) Signature Date

Hawaiian Commercial & Sugar Company Post-Burn Smoldering Log

Use this form to document post-burn field inspections for smoldering and flare-ups and any corrective actions implemented.

| | | | | | | | |
|--------|--|------------|--|----------------|--|-------------------------------|--|
| Field: | | Burn Date: | | Burn End Time: | | Hourly Checks Required Until: | |
|--------|--|------------|--|----------------|--|-------------------------------|--|

- Burn end time is when there are no longer any visible flames in the field.

| Time of Field Check | Hours After Burn End | Check Completed By (initials) | Visible Smoke Present in Field? | | | | Visible Smoke Leaving Field, Entering Public Areas? (Yes/No) | Time Deployed | | Comments |
|---|----------------------|-------------------------------|---------------------------------|---|---|---|--|---------------|-------------|----------|
| | | | N | L | M | H | | Rake | Water Wagon | |
| Conduct periodic checks of the field at least once per hour during the first four hours following the end of the burn. | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |

After the first four hours following the end of the burn, conduct periodic checks of the field at maximum intervals of four hours. Note that resumption of hourly monitoring is required per Exhibit 1 in the event of a flare-up or if visible smoke is observed leaving the field and entering public areas.

| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | |
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| | | | | | | | | | | |

Codes for smoke observed in field: N=None L=Light M=Medium H=Heavy

**CONTINUE MAKING CHECKS UNTIL DISCONTINUATION OF MONITORING IS PERMITTED PER EXHIBIT 1.
ATTACH CONTINUATION SHEETS AS NEEDED TO DOCUMENT CHECKS.**

**Hawaiian Commercial & Sugar Company
Post-Burn Smoldering Log
Continuation Sheet – Page _____ of _____**

Use this continuation sheet to document post-burn field inspections for smoldering and flare-ups and any corrective actions implemented.

| | | | | | | |
|--------|--|------------|--|----------------|--|--|
| Field: | | Burn Date: | | Burn End Time: | | |
|--------|--|------------|--|----------------|--|--|

- Burn end time is when there are no longer any visible flames in the field.

[illegible]

Conduct periodic checks of the field at maximum intervals of four hours. Note that resumption of hourly monitoring is required per Exhibit 1 in the event of a flare-up or if visible smoke is observed leaving the field and entering public areas.

[illegible]

Codes for smoke observed in field: N=None L=Light M=Medium H=Heavy

**CONTINUE MAKING CHECKS UNTIL DISCONTINUATION OF MONITORING IS PERMITTED PER EXHIBIT 1
ATTACH ADDITIONAL CONTINUATION SHEETS AS NEEDED TO DOCUMENT CHECKS**

| HC&S Weather Station Network Listing of Weather Stations Which Provide Wind Data | | | |
|---|------------------------------------|-------------------|--|
| Station Designation | Location | Division | Notes |
| 102-Field (R15) | Reservoir 15, Field 102 | Paia | |
| 107-Upper Paia | Field 107 | Paia | Moved from F208 to F107 |
| 109-Field (R12) | Reservoir 12, Field 109 | Paia | Vandalized. Not functional. |
| 110-Hamakuapoko | Field 110 | Paia | |
| 116-Field (R10) | Reservoir 10, Field 116 | Paia | |
| 200-Field (R23) | Reservoir 23, Field 200 | Paia | |
| 205-Field (R25) | Reservoir 25, Field 205 | Paia | |
| 213-Field (R29) | Reservoir 29, Field 213 | Paia | Vandalized but re-built. |
| 602-Spreckelsville | Field 602 | Paia | |
| 604-Field (R61) | Reservoir 61, Field 604 | Paia | |
| 611-Field (R60) | Reservoir 60, Field 611 | Paia | |
| ARP-Airport | Kahului Airport near Field 709 | Puunene | |
| 606-Field (R70) | Reservoir 70, Field 606 | Puunene | |
| 201-Haliimaile (R22) | Reservoir 22, Field 201 | Keahua | |
| 300-Field (R30) | Reservoir 30, Field 300 | Keahua | |
| 301-Pukalani | Field 301 | Keahua | |
| 311-Field (R35) | Reservoir 35, Field 311 | Keahua | |
| 313-Field (R33) | Reservoir 33, Field 304 | Keahua | |
| 400-Field (R42) | Reservoir 42, Field 400 | Keahua | Wind sensor replaced |
| 401-Omaopio | Field 401 | Keahua | |
| 414-Pulehu | Field 414 | Keahua | |
| 415-Field (R45) | Reservoir 45, Field 415 | Keahua | |
| 500-Field (R50) | Reservoir 50, Field 500 | Lowrie | Wind sensor removed |
| 501-Field (R51) | Reservoir 51, Field 502 | Lowrie | |
| 504-Field (R52) | Reservoir 52, Field 504 | Lowrie | |
| 800-Field (R80) | Reservoir 80, Field 800 | Lowrie | |
| 805-Field (R81) | Reservoir 81, Field 805 | Lowrie | |
| 807-Field (R84) | Reservoir 84, Field 807 | Lowrie | |
| 818-Lowrie | Field 818 | Lowrie | Moved from F813 to F818 |
| 817-Piilani (R83) | Field 817 | Lowrie | Moved from F823 to F817 |
| KIH-Kihei | Above Piilani Highway in Kihei | Lowrie | |
| Wailuku (R73) | Reservoir 73 | Maalaea | |
| 707-Puunene | Field 707 | Maalaea | Moved from F711 to F707 |
| 749-Waikapu | Field 749 | Maalaea | Moved from F735 to F749 |
| 757-Field (R91) | Reservoir 91, Field 906 | Maalaea | Across from F757 |
| 903-Field (R92) | Reservoir 92, Field 903 | Maalaea | |
| 906-Maalaea | Field 906 | Maalaea | |
| 911-Field (R90) | Reservoir 90, Field 911 | Maalaea | |
| 921-Field Maui Pine | MPC Reservoir, Field 921 | Maalaea | |
| KAP-Kula Ag Park | Kula Ag Park | Mauka Zone | |
| UHK-UH Kula | Kula | Mauka Zone | |
| POL-Poli Poli | Poli Poli Park | Mauka Zone | |



HC&S Maui Weather & Dispersion Forecast

www.westernwx.com/hcs **Example Forecast**

Wednesday December 00, 2015 issued 3:30 AM HST

WEATHER HIGHLIGHTS: Trades returned yesterday afternoon and expected to remain in place through Friday before giving way to Kona episode over the weekend. The return of trades has and will continue to bring light shower activity to windward and mauka locations.

| Today's Field(s) | Burn Time | DISPERSION | | WINDS | | Morning Inversion | Field Moisture | Stability Region |
|------------------|-----------|------------|------------|---------|-----------|-------------------|----------------|------------------|
| | | TOB* | Later (am) | Surface | Transport | | | |
| 201 | 4-6am | Good | Good | Good | Good | None | Wet | Windward |
| 301 | 6-10am | Fair | Good | Good | Good | Weak | Caution | Leeward |
| 401# | 4-10am | Poor | Fair | Fair | Good | Moderate | Dry | Both |

#Next planned

*For projected time of burn

F201 Cautionary Notes: Still a bit stable over the northeast sections of the plantation (fields in the vicinity of F201, but likely much improved. Expect decent plume rise from F201 will drift initially to the southwest that will veer south with smoke eventually moving offshore out over Maalaea Bay.

F301 Cautionary Notes: Light morning downslop winds with decent transport winds will promote a healthy plume rise with smoke passing down the valley overhead.

F401 Cautionary Notes: Wetter conditions possible around F401 may lead to field conditions being too wet to burn.

| 3 AM Plantation Stability | | | | | | |
|---------------------------|-------|----------|--------|-----------|--------|--------|
| Windward | Today | | | Sun 11/15 | | |
| | S.I. | Rating | Wind | S.I. | Rating | Wind |
| 301-KAP | 2 | Fair | ENE 8 | 3 | Fair | ENE 9 |
| 201-301 | 2 | Fair | ENE 12 | 4 | Fair | ENE 14 |
| 602-201 | 5 | Good | E 10 | 5 | Good | E 13 |
| 107-201 | 5 | Good | ESE 7 | 5 | Good | E 17 |
| Leeward | Today | | | Sun 11/15 | | |
| | S.I. | Rating | Wind | S.I. | Rating | Wind |
| 401-KAP | 1 | Marginal | ENE 8 | 3 | Fair | ENE 10 |
| 414-401 | 1 | Marginal | ENE 12 | 3 | Fair | ENE 13 |
| 817-414 | 0 | No Burn | SE 5 | 2 | Fair | ESE 8 |
| 906-414 | 2 | Fair | ESE 7 | 4 | Fair | NNE 14 |

| SI: | No Burn | Marginal | Fair | | Good | |
|-----|---------|----------|------|---|------|---|
| | 0 | 1 | 2 | 3 | 4 | 5 |

Kahului Airport

Rainfall Summary

Last 24hrs 0.00

year to date (since 1/1)

24.00", 180% of normal

2 AM Transport Winds

| | Today | Sun 11/15 |
|-------|----------|-----------|
| Lihue | Avg 18.8 | Avg 27.0 |
| Hilo | Avg 15.7 | Avg 19.7 |

Extended Forecast

General Maui Wind Pattern

Yesterday: Easterly trades 10-25 G35-40 mph
 Today: ESE'erly trades 10-25 G30 mph
 Thursday: ESE'erly trades 10-20 G25 mph
 Friday: ESE'erly trades 10-20 G25 mph
 Saturday: ESE'erly trades 10-20 mph
 Sunday: SE'erlies 10-20 mph

Vog?

Vortex?

Dispersion

EMI

MAUI Rainfall

Windward

Leeward

Green

Yes

Good

Light

Very Light

none

Green

Yes

Good

Light

Very Light

none

Green

Yes

Good

Light

Very Light

none

Green

Yes

Good

Moderate

Light

Light

Green

Possible

Fair

Moderate

Light

Light

*Green

No

Poor

Moderate

Light

Light

*(Check Vog Model)

Hawaiian Commercial & Sugar Company
Agricultural Burning Permit Number AGP-_____
Deviation Report Form

Use this form to report to the Department of Health any deviations from requirements of the Agricultural Burning Permit, including requirements specified in any Exhibit or Attachment.
 Deviation reports must be submitted in writing to the Department of Health, Clean Air Branch in Honolulu (with a copy to the Maui District Health Office) within five working days after the deviation occurred.

| | | | |
|--------------------|--|-----------------|--|
| Date of Deviation: | | Affected Field: | |
|--------------------|--|-----------------|--|

Identify the condition(s) of the permit, permit exhibit, or attachment from which a deviation occurred.

Describe the deviation.

What was the cause of this deviation?

Describe any corrective actions or preventative measures implemented to correct the deviation and/or to prevent a recurrence, including the date by which corrective actions were or will be implemented.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

| | | |
|---------------------------------------|-----------|------|
| Name (Harvesting Manager or designee) | Signature | Date |
|---------------------------------------|-----------|------|

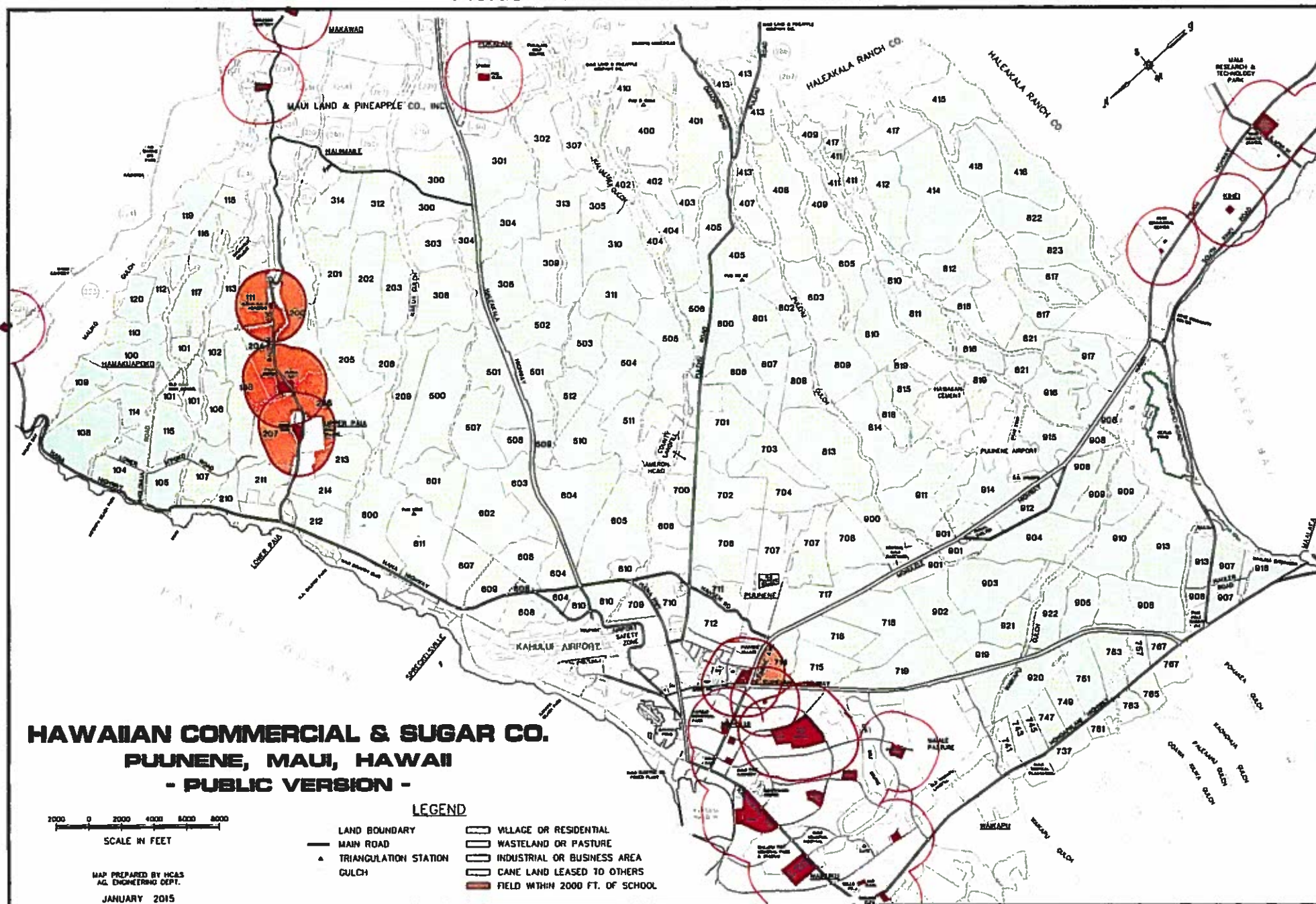
The Harvesting Manager shall notify HC&S Environmental Affairs within 24 hours of discovery of any deviation required to be reported to the Department of Health. Environmental Affairs will assist the Harvesting Manager in completing this form and will submit the completed and signed form to the Department of Health. Copies of each report shall be routed to the Plantation General Manager and retained in the harvesting records.

HC&S Fields Within 2,000 Feet of a School

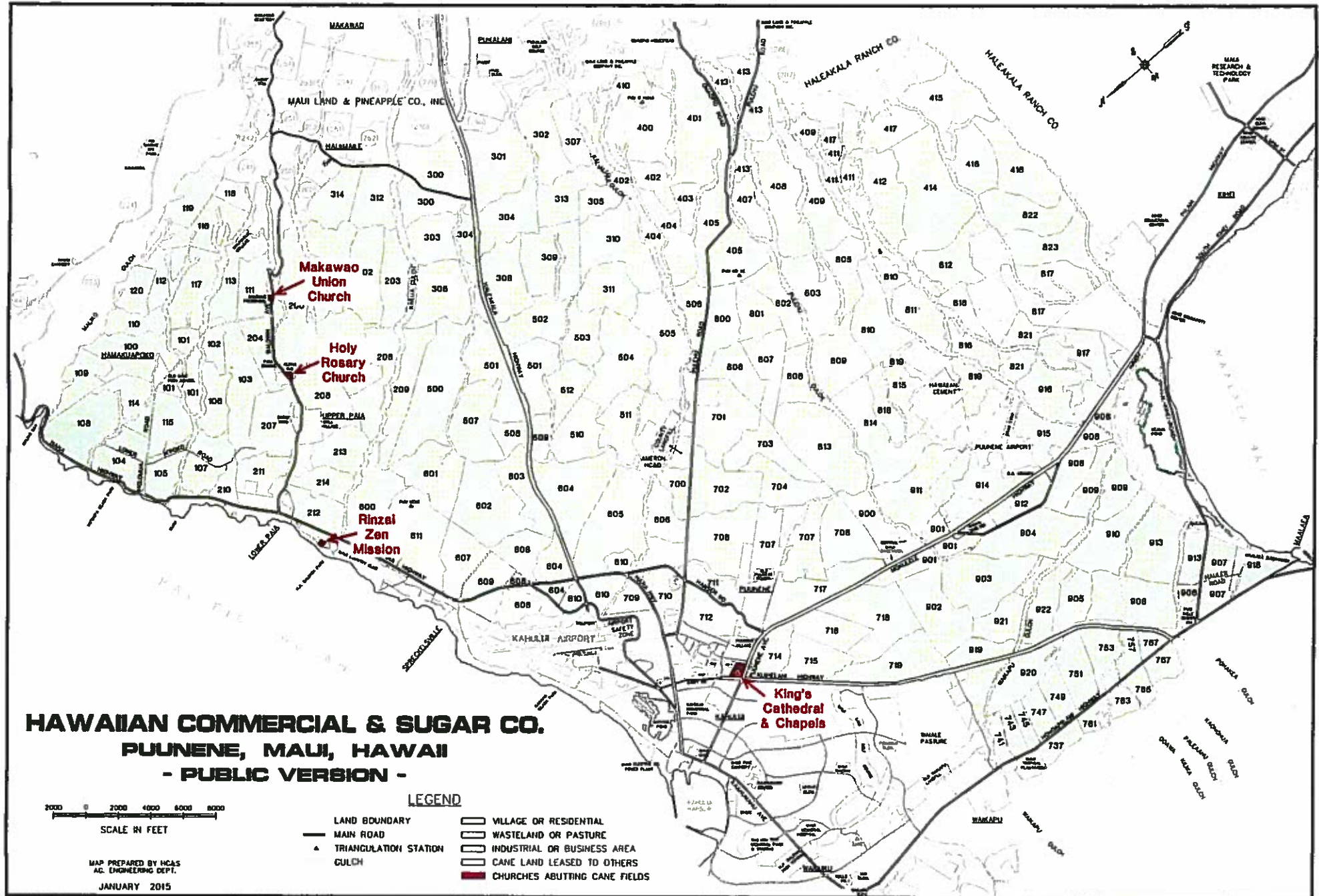
| School | Fields within 2,000 Feet |
|-------------------------------------|--|
| Aloha Kai II | 111 113 200 204 |
| Paia School/Holy Rosary/Aloha Kai I | 103 200 204 207 208 |
| Doris Todd | 103 204 207 208 211 213 |
| Ka'ahumanu Hou | 712 714 |
| Maui High School | 715 |
| Grace Bible Christian Pre-School | 714 715 |

| Field | Schools within 2,000 Feet |
|--------------|---|
| 103 | Paia School/Holy Rosary/Aloha Kai I Doris Todd |
| 111 | Aloha Kai II |
| 113 | Aloha Kai II |
| 200 | Aloha Kai II Paia School/Holy Rosary/Aloha Kai I |
| 204 | Aloha Kai II Paia School/Holy Rosary/Aloha Kai I Doris Todd |
| 207 | Paia School/Holy Rosary/Aloha Kai I Doris Todd |
| 208 | Paia School/Holy Rosary/Aloha Kai I Doris Todd |
| 211 | Doris Todd |
| 213 | Doris Todd |
| 712 | Ka'ahumanu Hou |
| 714 | Ka'ahumanu Hou Grace Bible Christian Pre-School |
| 715 | Maui High School Grace Bible Christian Pre-School |

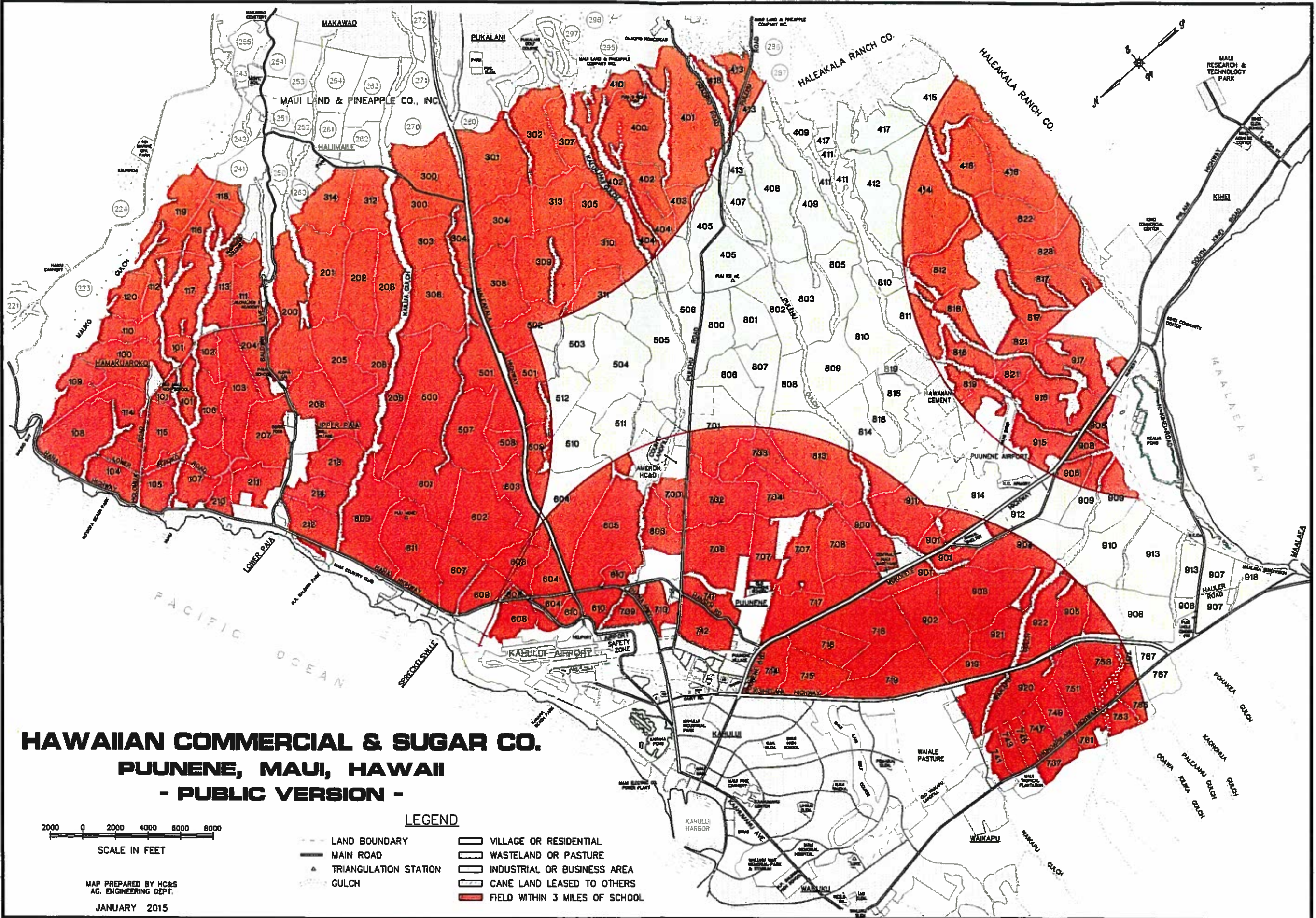
Fields Within 2000 ft. of Schools



Churches Abutting Cane Fields



Fields Within 3 miles of Schools



Hawaiian Commercial & Sugar Company
2016 Agricultural Burning Permit - Exhibit 2
(Public/Private Lands)

This exhibit describes specific procedures to be followed for pre-harvest burning of sugarcane in identified problem fields (hereafter "Exhibit 2 fields") to be harvested during the 2016 season. Exhibit 2 fields are those fields that, due to their location, cannot be harvested without some visible smoke impacts on neighboring areas, such as public roads and the Kahului Airport. The procedures included in this exhibit are intended to ensure that ground level visible smoke entering public areas is kept to a minimum.

The Harvesting Manager shall ensure that all fields listed in Exhibit 2 are burned in accordance with these procedures in addition to those described in Exhibit 1 (except as noted in Exhibit 1, Section B.(2)(a); see Section B below).

Exhibit 2 checklists specify wind conditions under which each field may be burned. Along with wind speed and direction in the field at the time of the burn, various other factors can affect the potential for ground level smoke to impact public areas during and after the burn. These include plume rise (determined in part by field moisture and the presence of temperature inversions), dispersion conditions, transport winds outside of the field being burned, the location/elevation of the field, smoldering after completion of the burn, and other factors. Some of these factors are also addressed in the Exhibit 2 checklist, and/or they may be addressed in Exhibit 1. Together, the Exhibit 1 and Exhibit 2 procedures are intended to minimize ground level visible smoke entering areas to which the public has unrestricted access.

A. Identification of fields - Exhibit 2 procedures are being submitted for the following fields or groups of fields which are scheduled to be harvested during the 2016 harvesting season or are included on the list of "unscheduled fields":

- Hana Highway Field 212
- Haleakala Highway Fields 501, 502
- Kahului Airport Fields 604, 608
- Mokulele Highway Fields 911, 916, 917
- Honoapiilani Highway Fields 741, 743, 745, 747

The location of each field listed above is shown on the field map submitted with the 2016 burn permit application. Burn procedures specific to each field are described in the attached exhibits.

B. Suspension of burns due to changes in wind conditions - Burning in Exhibit 2 fields shall be undertaken only under the meteorological conditions specified in this exhibit. Monitoring and recordkeeping procedures during the burn shall be as described in Section B.(1) of Exhibit 1. Wind speed and direction shall also be measured and recorded as described on the Exhibit 2 checklist prior to the start of each fire within a field.

The Harvesting Supervisor in charge of the burn shall monitor wind conditions during each burn. In the event that the wind speed or direction changes during the burn, the Harvesting Supervisor shall re-evaluate wind conditions to determine whether the conditions specified in this exhibit are still being met. If the specified conditions are no longer met, the Harvesting Supervisor shall ensure that no further burns are conducted in that field until the required conditions are again met.

- C. **Use of weather station data for burn decisions** - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. The weather stations to be used for making burn decisions in a field are specified in the Exhibit 2 checklist for that field. In the event that any weather station specified for use in making burn determinations in Exhibit 2 is out of service, either the mobile station or the nearest alternate station will be used instead.

When evaluating wind conditions prior to the start of a burn, the Harvesting Supervisor in charge of the burn shall observe the wind speed and direction being recorded at the appropriate weather station(s) over a period of time that is sufficient to ensure that the wind conditions are consistently within the limits specified for burning in the Exhibit 2 checklist. Detailed guidelines for assessing and recording wind conditions are provided in each Exhibit 2 checklist.

Consistent with normal meteorological convention, wind directions measured by the HC&S weather stations, and wind directions specified for burning in Exhibit 2, have always been expressed using a 16-point compass. The compass includes the four cardinal (N, S, E, and W), four intercardinal (NE, SE, SW, NW), and eight secondary intercardinal (NNE, ENE, ESE, SSE, SSW, WSW, WNW, NNW) directions. Measured wind directions are always reported to the nearest point on the 16-point compass, and wind conditions for burning are specified in Exhibit 2 based on the same level of precision provided by the weather stations (that is, within 11.25 degrees of each compass point).

Allowable wind directions for burning are stated *from* a given direction. That is, when a northerly wind direction is specified, allowable winds are blowing from the north *toward* the south. In addition, allowable winds are specified in the exhibit as a range of directions starting from the first direction listed and moving *clockwise* through the second direction listed. Thus, if the exhibit specifies winds must be “north/northeast to southeast”, then the allowable wind directions would be from a heading of north/northeast (22.5 degrees on a compass) through east (90 degrees) to southeast (135 degrees).

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| EXHIBIT 2 | Burn Procedures for Field 212 (adjacent to Hana Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Close proximity to Hana Highway

Areas of primary concern when burning this field: Baldwin Beach Park, Paia Town, Hana Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND EITHER
- Trade winds (north to east) less than 20 miles per hour OR
- Southeast to south winds less than 15 miles per hour

Weather data to determine optimum wind conditions will be from the Paia Division weather station nearest to, or most representative of, the field being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 212 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
| | | | | | | | |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR
- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

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| EXHIBIT 2 | Burn Procedures for Field 212 (adjacent to Hana Highway) (Page 2 of 2) |
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- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.

- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.

- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.

- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - Rinzai Zen Mission (church) is located adjacent to this field. Church-related restrictions on burning specified in Exhibit 1 shall be complied with.

- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.

- ☐ 9. Signs and/or guards will be posted on Hana Highway.

- ☐ 10. Attempts will be made to deliver written notices to adjacent residential premises and to the Rinzai Zen Mission two days prior to the burn.

- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| <p>CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.</p> |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 501 (adjacent to Haleakala Hwy) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Haleakala Highway

Areas of primary concern when burning this field: Pukalani, Haleakala Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND EITHER
- Trade winds (north to east) less than 25 miles per hour between 0400 and 0600 OR
- Mauka drainage winds (east/southeast to south/southeast) less than 15 miles per hour between 0400 and 0600 OR
- Trade winds (north to east) and mauka winds (east/southeast to south/southeast) less than 25 miles per hour after 0830.

Weather data to determine optimum wind conditions will be from the weather station(s) in field 313, 502 and/or 602 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 501 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

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| EXHIBIT 2 | Burn Procedures for Field 501 (adjacent to Haleakala Hwy) (Page 2 of 2) |
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☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR
- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)

- Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the "no burn" range.
- Burning will be conducted only with extreme caution if any applicable stability rating is in the "marginal" range.
- For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.

☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field

- Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is "fair" or better, or WWG predicts improvement to "fair" or better prior to the burn; AND
 - Predicted inversion is "weak" or "none", or WWG has advised that the inversion has broken prior to the burn.
- Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.

☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.

☐ 7. Burn Restrictions Related to Schools and Churches

- This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with when burning this field.
- There are no schools adjacent to this field.
- There are no schools within 2,000 feet of this field.
- There are no churches adjacent to this field.

☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.

☐ 9. Signs and/or guards will be posted on Haleakala Highway.

☐ 10. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| <p>CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.</p> |
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Supervisor Signature: _____

EXHIBIT 2 Burn Procedures for Field 502 (adjacent to Haleakala Hwy) **(Page 1 of 2)**

Reason for listing as Exhibit 2 field: Adjacent to Haleakala Highway

Areas of primary concern when burning this field: Pukalani, Haleakala Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND EITHER
- Trade winds (north to east) less than 25 miles per hour between 0400 and 0600 OR
- Mauka drainage winds (east/southeast to south/southeast) less than 15 miles per hour between 0400 and 0600 OR
- Trade winds (north to east) and mauka winds (east/southeast to south/southeast) less than 25 miles per hour after 0830.

Weather data to determine optimum wind conditions will be from the weather station(s) in field 313, 502 and/or 602 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 502 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

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| EXHIBIT 2 | Burn Procedures for Field 502 (adjacent to Haleakala Hwy) (Page 2 of 2) |
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☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR
- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)

- Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the "no burn" range.
- Burning will be conducted only with extreme caution if any applicable stability rating is in the "marginal" range.
- For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.

☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field

- Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is "fair" or better, or WWG predicts improvement to "fair" or better prior to the burn; AND
 - Predicted inversion is "weak" or "none", or WWG has advised that the inversion has broken prior to the burn.
- Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.

☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.

☐ 7. Burn Restrictions Related to Schools and Churches

- This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
- There are no schools adjacent to this field.
- There are no schools within 2,000 feet of this field.
- There are no churches adjacent to this field.

☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.

☐ 9. Signs and/or guards will be posted on Haleakala Highway.

☐ 10. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| <p>CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.</p> |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 604 (adjacent to Kahului Airport) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Kahului Airport

Areas of primary concern when burning this field: Kahului Airport, Kahului, Spreckelsville, Hana Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND EITHER
- Winds less than 15 miles per hour from any direction with the exception of southerly winds blowing toward residences in Spreckelsville, OR
- Winds above 15 miles per hour are acceptable only if blowing from west/northwest to north/northeast

Weather data to determine optimum wind conditions will be from the weather station(s) in field 602, 604, 606 and/or 611 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 604 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |

Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

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| EXHIBIT 2 | Burn Procedures for Field 604 (adjacent to Kahului Airport) (Page 2 of 2) |
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- ☐ 3. Burn Time Restrictions
Burning will be conducted:
 - Between 0300 and 0600 in order to prevent hazards to air traffic.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Hana Highway and Haleakala Highway.
- ☐ 10. A phone call will be made to the airport control tower the day before the burn.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| <p>CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.</p> |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 608 (close proximity to Kahului Airport) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Close proximity to Kahului Airport

Areas of primary concern when burning this field: Kahului Airport, Hana Highway, Spreckelsville

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. **Surface Winds (as measured by the specified HC&S weather stations)**

Burning will be undertaken only under the following surface wind conditions:

- **Wind speed at least 5 miles per hour** AND EITHER
- Winds less than 15 miles per hour from any direction with the exception of southerly winds blowing toward residences in Spreckelsville, OR
- Winds above 15 miles per hour are acceptable only if blowing from west/northwest to north/northeast

Weather data to determine optimum wind conditions will be from the weather station(s) in field 602, 604, 606 and/or 611 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 608 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Record location of mobile weather station, if used: _____

☐ 2. **Transport Winds (as measured by the morning soundings at Lihue and Hilo)**

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

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| EXHIBIT 2 | Burn Procedures for Field 608 (close proximity to Kahului Airport) (Page 2 of 2) |
|------------------|---|

- ☐ 3. Burn Time Restrictions
Burning will be conducted:
 - Between 0300 and 0600 in order to prevent hazards to air traffic.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Hana Highway.
- ☐ 10. A phone call will be made to the airport control tower the day before the burn.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.

Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 741 (adjacent to Honoapiilani Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Honoapiilani Highway

Areas of primary concern when burning this field: Maalaea, Waikapu/Wailuku, Honoapiilani Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND
- Trade winds (northwest to east) less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 749 or from the station that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 741 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 741 (adjacent to Honoapiilani Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Honoapiilani Highway.
- ☐ 10. Phone calls will be attempted to the Maalaea phone notification list.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 743 (adjacent to Honoapiilani Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Honoapiilani Highway

Areas of primary concern when burning this field: Maalaea, Waikapu/Wailuku, Honoapiilani Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND
- Trade winds (northwest to east) less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 749 or from the station that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 743 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 743 (adjacent to Honoapiilani Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Honoapiilani Highway.
- ☐ 10. Phone calls will be attempted to the Maalaea phone notification list.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 745 (adjacent to Honoapiilani Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Honoapiilani Highway

Areas of primary concern when burning this field: Maalaea, Waikapu/Wailuku, Honoapiilani Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. **Surface Winds (as measured by the specified HC&S weather stations)**

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND
- Trade winds (northwest to east) less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 749 or from the station that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 745 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. **Transport Winds (as measured by the morning soundings at Lihue and Hilo)**

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. **Burn Time Restrictions**

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 745 (adjacent to Honoapiilani Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Honoapiilani Highway.
- ☐ 10. Phone calls will be attempted to the Maalaea phone notification list.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 747 (adjacent to Honoapiilani Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Adjacent to Honoapiilani Highway

Areas of primary concern when burning this field: Maalaea, Waikapu/Wailuku, Honoapiilani Highway

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND
- Trade winds (northwest to east) less than 25 miles per hour

Weather data to determine optimum wind conditions will be from the weather station in field 749 or from the station that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 747 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 747 (adjacent to Honoapiilani Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Honoapiilani Highway.
- ☐ 10. Phone calls will be attempted to the Maalaea phone notification list.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 911 (close proximity to Mokulele Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Close proximity to Mokulele Highway

Areas of primary concern when burning this field: Mokulele Highway, Maui Humane Society, Kihei

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND EITHER
- Trade winds (north to east) less than 25 miles per hour OR
- Mauka drainage (east/southeast to south/southeast) winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather station(s) in field 707, 903, 911 and/or 921 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 911 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 911 (close proximity to Mokulele Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “no burn” range.
 - Burning will be conducted only with extreme caution if any applicable stability rating is in the “marginal” range.
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Mokulele Highway.
- ☐ 10. Phone calls will be attempted to the Kihei phone notification list.
- ☐ 11. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 916 (close proximity to Mokulele Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Close proximity to Mokulele Highway

Areas of primary concern when burning this field: Mokulele Highway, Kihei, Sugar Beach, Maalaea

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- **Wind speed at least 5 miles per hour AND EITHER**
 - Trade winds (north to east) less than 25 miles per hour OR
 - Mauka drainage (east/southeast to south/southeast) winds less than 20 miles per hour
- Weather data to determine optimum wind conditions will be from the weather station(s) in field 903, 906 (Station 757), 906 (Station 906) and/or 921 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 916 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
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Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

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| EXHIBIT 2 | Burn Procedures for Field 916 (close proximity to Mokulele Highway) (Page 2 of 2) |
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- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.
- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - **Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “marginal” or “no burn” range.**
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.
- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.
- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.
- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no churches or schools adjacent to, and no schools within 2,000 feet of, this field.
- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.
- ☐ 9. Signs and/or guards will be posted on Mokulele Highway.
- ☐ 10. Phone calls will be attempted to the Kihei phone notification list.
- ☐ 11. Attempts will be made to deliver written notices to Sugar Beach residential premises two days prior to the burn.
- ☐ 12. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

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| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
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Supervisor Signature: _____

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| EXHIBIT 2 | Burn Procedures for Field 917 (close proximity to Mokulele Highway) (Page 1 of 2) |
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Reason for listing as Exhibit 2 field: Close proximity to Mokulele Highway

Areas of primary concern when burning this field: Mokulele Highway, Kihei, Sugar Beach, Maalaea

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. **Surface Winds (as measured by the specified HC&S weather stations)**

Burning will be undertaken only under the following surface wind conditions:

- **Wind speed at least 5 miles per hour AND EITHER**
 - Trade winds (north to east) less than 25 miles per hour OR
 - Mauka drainage (east/southeast to south/southeast) winds less than 20 miles per hour
- Weather data to determine optimum wind conditions will be from the weather station(s) in field 903, 906 (Station 757), 906 (Station 906) and/or 921 that is nearest to, or most representative of, the field area being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.

When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 917 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Record location of mobile weather station, if used: _____

☐ 2. **Transport Winds (as measured by the morning soundings at Lihue and Hilo)**

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (**but not both**) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. **Burn Time Restrictions**

Burning will be conducted:

- Between 0400 and 0600 (to take advantage of light drainage winds at this time of day); OR

| | |
|------------------|--|
| EXHIBIT 2 | Burn Procedures for Field 917 (close proximity to Mokulele Highway) (Page 2 of 2) |
|------------------|--|

- Between 0600 and 1800 (excluding the peak traffic hours of 0700-0830 and 1530-1700), to minimize traffic disruptions.

- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - **Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “marginal” or “no burn” range.**
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.

- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.

- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.

- ☐ 7. Burn Restrictions Related to Schools and Churches
 - This field is located within three miles of one or more schools. Additional monitoring requirements specified in Exhibit 1 shall be complied with.
 - There are no churches or schools adjacent to, and no schools within 2,000 feet of, this field.

- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.

- ☐ 9. Signs and/or guards will be posted on Mokulele Highway.

- ☐ 10. Phone calls will be attempted to the Kihei phone notification list.

- ☐ 11. Attempts will be made to deliver written notices to Sugar Beach residential premises two days prior to the burn.

- ☐ 12. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

| |
|--|
| CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record. |
|--|

Supervisor Signature: _____

**Hawaiian Commercial & Sugar Company
2016 Agricultural Burning Permit - Exhibit 3
(Public/Private Lands)**

This exhibit describes specific procedures to be followed for pre-harvest burning of sugarcane in all fields to be harvested during the 2016 season other than those identified in Exhibit 2.

Burn procedures specific to each field are described in the attached Exhibit 3 checklists. The Harvesting Manager shall ensure that all fields not listed in Exhibit 2 are burned in accordance with these procedures in addition to those described in Exhibit 1.

Exhibit 3 checklists specify wind conditions under which each field may be burned. Along with wind speed and direction in the field at the time of the burn, various other factors can affect the potential for ground level smoke to impact public areas during and after the burn. These include plume rise (determined in part by field moisture and the presence of temperature inversions), dispersion conditions, transport winds outside of the field being burned, the location/elevation of the field, smoldering after completion of the burn, and other factors. Some of these factors are also addressed in the Exhibit 3 checklist, and/or they may be addressed in Exhibit 1. Together, the Exhibit 1 and Exhibit 3 procedures are intended to minimize ground level visible smoke entering areas to which the public has unrestricted access.

- A. Identification of fields** - Exhibit 3 procedures are being submitted for all fields or groups of fields which are scheduled to be harvested during the 2016 harvesting season or are included on the list of "unscheduled fields" other than those listed in Exhibit 2. The location of each field is shown on the field map submitted with the 2016 burn permit application.
- B. Suspension of burns due to changes in wind conditions** - Burning in Exhibit 3 fields shall be undertaken only under the meteorological conditions specified in this exhibit. Monitoring and recordkeeping procedures during the burn shall be as described in Section B.(1) of Exhibit 1. Wind speed and direction shall also be measured and recorded as described on the Exhibit 3 checklist prior to the start of each fire within a field.

The Harvesting Supervisor in charge of the burn shall monitor wind conditions during each burn. In the event that the wind speed or direction changes during the burn, the Harvesting Supervisor shall re-evaluate wind conditions to determine whether the conditions specified in this exhibit are still being met. If the specified conditions are no longer met, the Harvesting Supervisor shall ensure that no further burns are conducted in that field until the required conditions are again met.

- C. Use of weather station data for burn decisions** - HC&S operates both fixed and mobile weather stations for collecting weather data to be used in making burn determinations. The weather stations to be used for making burn decisions in a field

are specified in the Exhibit 3 checklist for that field. In the event that any weather station specified for use in making burn determinations in Exhibit 3 is out of service, either the mobile station or the nearest alternate station will be used instead.

When evaluating wind conditions prior to the start of a burn, the Harvesting Supervisor in charge of the burn shall observe the wind speed and direction being recorded at the appropriate weather station(s) over a period of time that is sufficient to ensure that the wind conditions are consistently within the limits specified for burning in the Exhibit 3 checklist. Detailed guidelines for assessing and recording wind conditions are provided in each Exhibit 3 checklist.

Consistent with normal meteorological convention, wind directions measured by the HC&S weather stations, and wind directions specified for burning in Exhibit 3, have always been expressed using a 16-point compass. The compass includes the four cardinal (N, S, E, and W), four intercardinal (NE, SE, SW, NW), and eight secondary intercardinal (NNE, ENE, ESE, SSE, SSW, WSW, WNW, NNW) directions. Measured wind directions are always reported to the nearest point on the 16-point compass, and wind conditions for burning are specified in Exhibit 3 based on the same level of precision provided by the weather stations (that is, within 11.25 degrees of each compass point).

Allowable wind directions for burning are stated *from* a given direction. That is, when a northerly wind direction is specified, allowable winds are blowing from the north *toward* the south. In addition, allowable winds are specified in the exhibit as a range of directions starting from the first direction listed and moving *clockwise* through the second direction listed. Thus, if the exhibit specifies winds must be “north/northeast to southeast”, then the allowable wind directions would be from a heading of north/northeast (22.5 degrees on a compass) through east (90 degrees) to southeast (135 degrees).

| | |
|------------------|---|
| EXHIBIT 3 | Burn Procedures for Field 411 (Page 1 of 2) |
|------------------|---|

Areas of primary concern when burning this field: Kihei, Upcountry Communities

Special Burn Procedures to Minimize Smoke Impacts

Place a check in the box after each item is completed. Retain completed form in the harvesting records.

☐ 1. Surface Winds (as measured by the specified HC&S weather stations)

Burning will be undertaken only under the following surface wind conditions:

- Wind speed at least 3 miles per hour AND
- Northwest to south/southwest (through east) winds less than 20 miles per hour

Weather data to determine optimum wind conditions will be from the weather station(s) in field 414, 415, 805, 817, and/or KAP, that is nearest to, or most representative of, the field being burned, or from the mobile weather station placed at a location that is representative of the field being burned.

Observe for trend in winds and record wind data below prior to the start of each burn.

When using a fixed weather station: Surface wind speed and direction must be recorded at least three times over a 15-minute interval. To ensure winds are consistently meeting the requirements for burning, recorded wind speed and direction must remain within the ranges specified above for a minimum of 15 minutes in order for burning to commence.
When using the mobile weather station: Current and average surface wind speed and direction during the 15-minute period just prior to the start of the burn must be recorded. To ensure winds are consistently meeting the requirements for burning, both the 15-minute average and current wind speed and direction must be recorded immediately prior to the burn and must be within the ranges specified above in order for burning to commence.

| Wind Data for Burn in Field 411 Date: _____ | | | | | | | |
|--|------------|----------------|-----------------|------|------------|----------------|-----------------|
| Time | Wind Speed | Wind Direction | Weather Station | Time | Wind Speed | Wind Direction | Weather Station |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Record location of mobile weather station, if used: _____

☐ 2. Transport Winds (as measured by the morning soundings at Lihue and Hilo)

Burning will be undertaken only under the following transport wind conditions:

- Average transport winds at Lihue OR at Hilo OR at both locations are greater than 7 miles per hour.
- If average transport winds at *either* Lihue or Hilo (but not both) are 7 miles per hour or less, burning may proceed with caution provided that other conditions are favorable for adequate smoke dispersion.

☐ 3. Burn Time Restrictions

Burning will be conducted:

- Between 0600 and 1800

| | |
|------------------|--|
| EXHIBIT 3 | Burn Procedures for Field 411 (Page 2 of 2) |
|------------------|--|

- ☐ 4. Real-Time Stability (Use windward and/or leeward stability rating(s) as called for by the daily WWG forecast)
 - **Burning will be conducted only if there is no applicable stability rating (i.e. windward and/or leeward) in the “marginal” or “no burn” range.**
 - For burns prior to 9 AM where real-time stability data are not available, the burn decision shall be based on forecast stability instead.

- ☐ 5. Additional Limitations on Meteorological Conditions for Burning this Field
 - Burning shall be conducted only when the following conditions are forecast by WWG:
 - Predicted dispersion is “fair” or better, or WWG predicts improvement to “fair” or better prior to the burn; AND
 - Predicted inversion is “weak” or “none”, or WWG has advised that the inversion has broken prior to the burn.
 - Burning shall be conducted only when the NWS Fire Weather Forecast mixing height for the burn area and time is at least 1,700 feet above ground level.

- ☐ 6. Cautionary Notes - WWG Weather and Dispersion Forecast Cautionary Notes for this field shall be reviewed and considered in making the burn decision.

- ☐ 7. Burn Restrictions Related to Schools and Churches
 - There are no schools located within three miles of this field.
 - There are no schools adjacent to this field.
 - There are no schools within 2,000 feet of this field.
 - There are no churches adjacent to this field.

- ☐ 8. Green Harvest Requirements - There are no green harvest requirements for this field.

- ☐ 9. Phone calls will be attempted to the Kihei phone notification list.

- ☐ 10. After completion of the burn, water trucks will be sent into the field to extinguish remaining smoldering piles to eliminate smoke emissions as soon as possible.

| |
|---|
| <p>CERTIFICATION: I certify that I have knowledge of the facts herein set forth, that the same are true, accurate, and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Department of Health as public record.</p> |
|---|

Supervisor Signature: _____

| 2016 Exhibit 3 Fields - Summary of Allowable Wind Conditions | | | |
|--|-----------------------------|--|--|
| Fields | Sensitive Areas | Allowable Winds | Justification for Conditions |
| 411 | Kihei, Upcounty Communities | NW to SSW (through E), <20 mph Minimum wind speed 3 mph | Wind directions should carry smoke away from public areas. Elevation of fields and plume rise should ensure smoke passes aloft over Kihei. Minimum wind speed of 3 mph should ensure adequate wind for dispersion of any ground level smoke. |

| 2016 - Field Exhibits and Burn Hours (Public/Private Lands) | | | | | |
|---|-----------|------------------|-----------|---|-----------------|
| Field # | Previous | Exhibit 2 Reason | 2016 | Burn Hour Limitations | Reason |
| 2016 Crop | | | | | |
| 212 | Exhibit 2 | Hana Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road Impacts |
| 501 | Exhibit 2 | Haleakala Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 502 | Exhibit 2 | Haleakala Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 604 | Exhibit 2 | Airport | Exhibit 2 | 0300 to 0600 | Airport impacts |
| 608 | Exhibit 2 | Airport | Exhibit 2 | 0300 to 0600 | Airport impacts |
| 741 | Exhibit 2 | Honoapiilani Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 743 | Exhibit 2 | Honoapiilani Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 745 | Exhibit 2 | Honoapiilani Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 747 | Exhibit 2 | Honoapiilani Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 916 | Exhibit 2 | Mokulele Highway | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| | | | | | |
| Seed Fields | | | | | |
| 911 | Exhibit 2 | Mokulele Highway | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| | | | | | |
| Millwater Fields | | | | | |
| None | | | | | |
| 2016 Early Harvest | | | | | |
| 411 | Exhibit 3 | | Exhibit 3 | none - 0600 to 1800 | NA |

Notes

portion early harvest

| 2016 - Field Exhibits and Burn Hours (Public/Private Lands) | | | | | |
|---|-----------|------------------|-----------|---|--------------|
| Field # | Previous | Exhibit 2 Reason | 2016 | Burn Hour Limitations | Reason |
| 501 | Exhibit 2 | Haleakala Hwy | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| 917 | Exhibit 2 | Mokulele Highway | Exhibit 2 | 0400 to 1800 excluding peak traffic hours | Road impacts |
| | | | | | |
| 2015 Carryover | | | | | |
| None | | | | | |
| Damaged, Test Plots | | | | | |
| None | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Notes
portion on harvest schedule

Harvest Schedule 2016

| Seq # | Field | Var | Sched | Hvst Start | Age | Total | | | Actuals as of 1/1/2016 | | | Printed on 12/9/2015 | | | Date | Wks | Rate |
|-------|-------|-----|-------|------------|---------|---------|-------|-------|------------------------|------|-------------|----------------------|---------|---------|---------|-----|------|
| | | | | | | Balance | acre | TCA | TSA | TCTS | Hvstd Acres | Actuals | Actuals | Actuals | | | |
| | | | | | | acre | acre | | | | | TCA | TSA | TCTS | | | |
| 1 | D505 | 1 | 7052 | P | 3/8/15 | 15.3 | 314.4 | 314.4 | 70 | 8.8 | 8.0 | | | | 1/25/15 | 6.0 | |
| 2 | D506 | 1 | 3567 | P | 3/18/16 | 27.3 | 135.2 | 135.2 | 95 | 12.5 | 7.6 | | | | 2/05/16 | 6.0 | |
| 3 | D813 | 2 | 7052 | P | 3/22/16 | 29.1 | 236.1 | 236.1 | 78 | 10.4 | 7.5 | | | | 2/09/16 | 6.0 | |
| 4 | D402 | 1 | 4319 | P | 3/28/16 | 28.2 | 121.1 | 121.1 | 95 | 12.5 | 7.6 | | | | 2/15/16 | 6.0 | |
| 5 | D718 | 1 | 7052 | P | 3/31/16 | 27.3 | 371.6 | 371.6 | 105 | 13.5 | 7.8 | | | | 2/04/16 | 8.0 | |
| 6 | D906 | 2 | 5794 | P | 4/8/16 | 29.5 | 129.4 | 129.4 | 90 | 12.2 | 7.4 | | | | 2/12/16 | 8.0 | |
| 7 | D403 | 1 | 4319 | P | 4/11/16 | 28.7 | 67.7 | 67.7 | 100 | 13.9 | 7.2 | | | | 2/29/16 | 6.0 | |
| 8 | D715 | 1 | 4319 | P | 4/12/16 | 28.2 | 174.5 | 174.5 | 100 | 12.6 | 8.0 | | | | 2/16/16 | 8.0 | |
| 9 | D404 | 1 | 7052 | P | 4/16/16 | 27.9 | 280.1 | 280.1 | 100 | 13.5 | 7.4 | | | | 3/05/16 | 6.0 | |
| 10 | D747 | 1 | 7052 | P | 4/22/16 | 26.0 | 91.4 | 91.4 | 100 | 15.4 | 6.5 | | | | 3/11/16 | 6.0 | |
| 11 | D741 | 1 | 4319 | P | 4/24/16 | 25.9 | 55.4 | 55.4 | 94 | 12.9 | 7.3 | | | | 3/13/16 | 6.0 | |
| 12 | D109 | 1 | 7052 | P | 4/25/16 | 32.1 | 127.7 | 127.7 | 85 | 10.2 | 8.3 | | | | 3/14/16 | 6.0 | |
| 13 | D743 | 1 | 3567 | P | 4/27/16 | 26.0 | 70.7 | 70.7 | 90 | 12.7 | 7.1 | | | | 3/16/16 | 6.0 | |
| 14 | D709 | 1 | 3792 | P | 4/29/16 | 24.5 | 70.5 | 70.5 | 95 | 12.2 | 7.8 | | | | 3/18/16 | 6.0 | |
| 15 | D745 | 1 | 3792 | P | 4/30/16 | 24.4 | 57.0 | 57.0 | 92 | 13.7 | 6.7 | | | | 3/19/16 | 6.0 | |
| 16 | D108 | 2 | 7052 | P | 5/1/16 | 40.0 | 225.3 | 225.3 | 91 | 9.1 | 10.0 | | | | 2/21/16 | 10. | |
| 17 | R107 | 2 | 7052 | P | 5/5/16 | 31.8 | 60.7 | 60.7 | 84 | 8.4 | 10.0 | | | | 3/10/16 | 8.0 | |
| 18 | D414 | 1 | 4319 | P | 5/6/16 | 27.1 | 437.8 | 437.8 | 98 | 14.1 | 7.0 | | | | 3/25/16 | 6.0 | |
| 19 | D208 | 1 | 7052 | P | 5/15/16 | 30.8 | 203.1 | 203.1 | 80 | 10.2 | 7.9 | | | | 3/20/16 | 8.0 | |
| 20 | D913 | 1 | 3792 | P | 5/18/16 | 24.7 | 389.4 | 389.4 | 105 | 12.3 | 8.5 | | | | 4/06/16 | 6.0 | |
| 21 | D213 | 1 | 7052 | P | 5/26/16 | 19.8 | 74.1 | 74.1 | 83 | 11.1 | 7.5 | | | | 3/31/16 | 8.0 | |
| 22 | D807 | 1 | 7052 | P | 5/28/16 | 24.7 | 154.7 | 154.7 | 82 | 10.2 | 8.0 | | | | 4/16/16 | 6.0 | |
| 23 | D907 | 1 | 3792 | P | 5/30/16 | 25.3 | 184.2 | 184.2 | 97 | 10.5 | 9.2 | | | | 4/18/16 | 6.0 | |
| 24 | D212 | 1 | 3567 | P | 6/2/16 | 32.0 | 157.5 | 157.5 | 88 | 10.0 | 8.8 | | | | 4/07/16 | 8.0 | |
| 25 | D214 | 1 | 3567 | P | 6/5/16 | 32.0 | 147.8 | 147.8 | 91 | 11.4 | 8.0 | | | | 4/10/16 | 8.0 | |
| 26 | D753 | 1 | 7052 | P | 6/7/16 | 24.9 | 150.8 | 150.8 | 100 | 11.2 | 8.9 | | | | 4/26/16 | 6.0 | |
| 27 | D767 | 1 | 7052 | P | 6/10/16 | 24.7 | 122.4 | 122.4 | 105 | 13.3 | 7.9 | | | | 4/29/16 | 6.0 | |
| 28 | D716 | 1 | 7052 | P | 6/12/16 | 24.8 | 143.6 | 143.6 | 110 | 12.5 | 8.8 | | | | 4/17/16 | 8.0 | |
| 29 | D822 | 1 | 3567 | P | 6/15/16 | 24.6 | 167.9 | 167.9 | 90 | 12.5 | 7.2 | | | | 5/04/16 | 6.0 | |
| 30 | D806 | 1 | 3567 | P | 6/17/16 | 24.7 | 87.8 | 87.8 | 98 | 12.1 | 8.1 | | | | 5/06/16 | 6.0 | |
| 31 | H112 | 1 | 4319 | P | 6/19/16 | 51.5 | 16.8 | 16.8 | 118 | 11.8 | 10.0 | | | | 5/08/16 | 6.0 | |
| 32 | H112 | 2 | 4319 | P | 6/19/16 | 35.7 | 101.0 | 101.0 | 118 | 12.4 | 9.5 | | | | 5/08/16 | 6.0 | |
| 33 | D412 | 1 | 3567 | P | 6/21/16 | 24.6 | 244.1 | 244.1 | 90 | 13.6 | 6.6 | | | | 5/10/16 | 6.0 | |
| 34 | D601 | 1 | 7052 | P | 6/25/16 | 24.7 | 183.2 | 183.2 | 90 | 13.9 | 6.5 | | | | 5/14/16 | 6.0 | |
| 35 | D310 | 1 | 3567 | P | 6/28/16 | 23.6 | 338.3 | 338.3 | 90 | 12.2 | 7.4 | | | | 5/17/16 | 6.0 | |
| 36 | D116 | 1 | 7052 | P | 7/3/16 | 30.6 | 211.0 | 211.0 | 85 | 12.2 | 6.9 | | | | 5/08/16 | 8.0 | |
| 37 | D117 | 1 | 3567 | P | 7/6/16 | 29.7 | 211.4 | 211.4 | 75 | 10.4 | 7.2 | | | | 5/11/16 | 8.0 | |
| 38 | D608 | 1 | 7052 | P | 7/9/16 | 24.7 | 146.0 | 146.0 | 95 | 12.9 | 7.4 | | | | 5/28/16 | 6.0 | |
| 39 | D305 | 1 | 7052 | P | 7/12/16 | 24.8 | 95.6 | 95.6 | 95 | 13.5 | 7.0 | | | | 5/31/16 | 6.0 | |
| 40 | D603 | 1 | 7052 | P | 7/13/16 | 24.7 | 162.5 | 162.5 | 95 | 13.0 | 7.3 | | | | 6/01/16 | 6.0 | |
| 41 | D303 | 1 | 7052 | P | 7/16/16 | 24.7 | 170.2 | 170.2 | 100 | 13.8 | 7.3 | | | | 6/04/16 | 6.0 | |
| 42 | D105 | 1 | 7052 | P | 7/19/16 | 33.0 | 146.5 | 146.5 | 88 | 11.0 | 8.0 | | | | 5/24/16 | 8.0 | |
| 43 | D805 | 1 | 7052 | P | 7/21/16 | 24.7 | 129.4 | 129.4 | 105 | 14.3 | 7.3 | | | | 6/09/16 | 6.0 | |
| 44 | D809 | 1 | 7052 | P | 7/23/16 | 24.7 | 263.0 | 263.0 | 100 | 13.4 | 7.5 | | | | 6/11/16 | 6.0 | |
| 45 | D607 | 1 | 7052 | P | 7/28/16 | 24.6 | 188.9 | 188.9 | 92 | 13.0 | 7.1 | | | | 6/16/16 | 6.0 | |
| 46 | D900 | 1 | 7052 | P | 7/31/16 | 24.7 | 148.7 | 148.7 | 95 | 14.7 | 6.4 | | | | 6/19/16 | 6.0 | |
| 47 | D401 | 1 | 7052 | P | 8/3/16 | 24.6 | 169.1 | 169.1 | 85 | 11.6 | 7.3 | | | | 6/22/16 | 6.0 | |
| 48 | D115 | 1 | 7052 | P | 8/5/16 | 25.0 | 156.4 | 156.4 | 87 | 7.3 | 11.9 | | | | 6/10/16 | 8.0 | |
| 49 | D916 | 1 | 7052 | P | 8/8/16 | 24.6 | 297.4 | 297.4 | 90 | 11.0 | 8.2 | | | | 6/27/16 | 6.0 | |
| 50 | D703 | 1 | 7052 | P | 8/13/16 | 24.6 | 194.3 | 194.3 | 95 | 11.6 | 8.2 | | | | 7/02/16 | 6.0 | |
| 51 | D401 | 2 | 7052 | P | 8/16/16 | 24.1 | 359.2 | 359.2 | 85 | 11.6 | 7.3 | | | | 7/05/16 | 6.0 | |
| 52 | D119 | 1 | 7052 | P | 8/22/16 | 24.8 | 159.8 | 159.8 | 90 | 10.7 | 8.4 | | | | 6/27/16 | 8.0 | |

Harvest Schedule 2016

| Seq # | Field | Var | Sched | Hvst Start | Age | Total Balance | | Actuals as of *** Estimates | | | 1/1/2016 Hvstd Acres | Printed on ***** Actuals | | | 12/9/2015 ***** Polado ***** | |
|-------------------|-------|-----|-------|---------------|----------|---------------|--------|--------------------------------|-----|------|----------------------------|-----------------------------|-----|------|---------------------------------|-------------|
| | | | | | | acre | acre | TCA | TSA | TCTS | | TCA | TSA | TCTS | TSA | Date |
| 53 | D120 | 1 | 7052 | P | 8/24/16 | 24.7 | 120.0 | 120.0 | 90 | 9.1 | 9.9 | | | | | 6/29/16 |
| 54 | D908 | 1 | 4319 | P | 8/26/16 | 24.3 | 81.2 | 81.2 | 95 | 12.5 | 7.6 | | | | | 7/15/16 |
| 55 | D600 | 1 | 4319 | P | 8/28/16 | 23.3 | 329.7 | 329.7 | 97 | 12.6 | 7.7 | | | | | 7/17/16 |
| 56 | D608 | 2 | 4319 | P | 9/3/16 | 24.3 | 155.2 | 155.2 | 95 | 12.9 | 7.4 | | | | | 7/23/16 |
| 57 | H118 | 1 | 4153 | P | 9/5/16 | 38.3 | 62.0 | 62.0 | 108 | 14.8 | 7.3 | | | | | 7/25/16 |
| 58 | D104 | 1 | 4319 | P | 9/7/16 | 24.4 | 209.4 | 209.4 | 95 | 11.7 | 8.1 | | | | | 7/13/16 |
| 59 | D107 | 1 | 4319 | P | 9/10/16 | 24.3 | 69.7 | 69.7 | 85 | 10.2 | 8.3 | | | | | 7/16/16 |
| 60 | D508 | 1 | 3567 | P | 9/11/16 | 23.8 | 73.3 | 73.3 | 90 | 12.2 | 7.4 | | | | | 7/31/16 |
| 61 | D504 | 1 | 3567 | P | 9/13/16 | 24.1 | 278.6 | 278.6 | 85 | 11.5 | 7.4 | | | | | 8/02/16 |
| 62 | D610 | 1 | 7052 | P | 9/17/16 | 25.2 | 129.2 | 129.2 | 85 | 10.0 | 8.5 | | | | | 8/06/16 |
| 63 | D205 | 1 | 4319 | P | 9/19/16 | 24.5 | 248.9 | 248.9 | 85 | 11.6 | 7.3 | | | | | 7/25/16 |
| 64 | D314 | 1 | 3792 | P | 9/23/16 | 24.3 | 183.7 | 183.7 | 90 | 12.0 | 7.5 | | | | | 8/12/16 |
| 65 | D213 | 2 | 4319 | P | 9/26/16 | 23.8 | 88.7 | 88.7 | 85 | 11.6 | 7.3 | | | | | 8/01/16 |
| 66 | D704 | 1 | 3792 | P | 9/27/16 | 24.3 | 193.1 | 193.1 | 90 | 11.8 | 7.6 | | | | | 8/16/16 |
| 67 | D207 | 1 | 7052 | P | 10/1/16 | 24.3 | 216.4 | 216.4 | 85 | 10.1 | 8.4 | | | | | 8/06/16 |
| 68 | D606 | 1 | 7052 | P | 10/4/16 | 24.3 | 130.9 | 130.9 | 90 | 13.1 | 6.9 | | | | | 8/23/16 |
| 69 | D504 | 2 | 3567 | P | 10/6/16 | 24.9 | 43.1 | 43.1 | 90 | 12.2 | 7.4 | | | | | 8/25/16 |
| 70 | D507 | 1 | 7052 | P | 10/7/16 | 24.3 | 261.5 | 261.5 | 85 | 11.4 | 7.5 | | | | | 8/26/16 |
| 71 | D816 | 1 | 5794 | P | 10/12/16 | 24.2 | 217.4 | 217.4 | 100 | 14.8 | 6.8 | | | | | 8/31/16 |
| 72 | D604 | 2 | 7052 | P | 10/16/16 | 23.6 | 187.4 | 187.4 | 88 | 11.3 | 7.8 | | | | | 9/04/16 |
| 73 | D812 | 1 | 7052 | P | 10/19/16 | 24.2 | 197.5 | 197.5 | 90 | 11.6 | 7.7 | | | | | 9/07/16 |
| 74 | D814 | 1 | 7052 | P | 10/23/16 | 24.0 | 352.4 | 352.4 | 95 | 11.4 | 8.3 | | | | | 9/11/16 |
| 75 | D604 | 1 | 7052 | P | 10/30/16 | 24.6 | 328.0 | 328.0 | 88 | 11.3 | 7.8 | | | | | 9/18/16 |
| 76 | D605 | 2 | 7052 | P | 11/5/16 | 20.3 | 193.0 | 193.0 | 85 | 10.0 | 8.5 | | | | | 9/24/16 |
| 77 | D610 | 2 | 7052 | P | 11/8/16 | 24.3 | 46.4 | 46.4 | 85 | 10.0 | 8.5 | | | | | 9/27/16 |
| 78 | D311 | 1 | 7052 | P | 11/9/16 | 24.2 | 199.3 | 199.3 | 90 | 11.6 | 7.7 | | | | | 9/28/16 |
| 79 | D717 | 1 | 7052 | P | 11/13/16 | 24.2 | 154.2 | 154.2 | 98 | 11.1 | 8.8 | | | | | 9/18/16 |
| 80 | D501 | 1 | 4153 | P | 11/16/16 | 24.2 | 222.3 | 222.3 | 90 | 12.5 | 7.2 | | | | | 10/05/16 |
| 81 | D503 | 1 | 4153 | P | 11/21/16 | 24.3 | 155.4 | 155.4 | 90 | 11.7 | 7.7 | | | | | 10/10/16 |
| 82 | D502 | 1 | 7052 | P | 11/26/16 | 24.2 | 211.7 | 211.7 | 90 | 13.2 | 6.8 | | | | | 10/15/16 |
| 0 / 1,325,490 TNC | | | | | | 26.2 | 14,442 | 14,442 | 92 | 11.9 | 7.71 | 0 | 0 | 0.0 | 0.00 | 0 / 172,007 |

TTS

M=Millwater T=Target C=Carrvover. B=Billet U=Unscheduled. E=Experimental H=Hel Fld. *= Polado
t= time sensitive R-HEL 5/1-10/1 c-Condo Mav. Sep. Oct X- change since

Hawaiian Commercial and Sugar Company
Addendum to 2016 Harvest Schedule
(Public/Private Lands)

This addendum is intended to clarify which fields or portions of fields listed in the 2016 Harvest Schedule are to be included under the agricultural burning permit for public/private lands.

Fields Located Entirely on Public Lands

There are no fields on the 2016 Harvest Schedule located entirely on public lands.

Fields Located Partially on Public Lands

Fields 212, 501, 502, 604, 608, 741, 743, 745, 747, and 916 are located partially on private lands and partially on public lands. All or portions of these fields are included in this permit as described below.

| | |
|---------------------------|---|
| Field 212 | Approximately 6.4 crop acres in this field are located on land owned by the County of Maui. A total of 8.2 acres in blocks 2121-H and I makai of Hana Highway (including 1.8 acres owned by HC&S) are included in this permit |
| Fields 501, 502, and 604 | Approximately 5.7 crop acres in these fields along Haleakala Highway are located on land owned by the State of Hawaii and are included in this permit. |
| Field 608 | Approximately 110.3 crop acres in this field near Kahului Airport are located on land owned by the State of Hawaii and are included in this permit. |
| Fields 741, 743, 745, 747 | Approximately 100 crop acres in these fields are located on land owned by the County of Maui and are included in this permit. |
| Field 916 | Approximately 296.2 crop acres in this field are located on land owned by the State of Hawaii. The entire field (297.4 crop acres, including 1.2 acres owned by HC&S) is included in this permit. |

Except for an additional 4.2-acre portion of field 501 as noted on the Unscheduled Fields List, the remaining crop acres in each of these fields, if any, are excluded from this permit.

Fields Located Entirely on Private Lands

Except as indicated above, all remaining fields and acreage listed in the 2016 Harvest Schedule are to be excluded from this permit.

| |
|---|
| <p style="text-align: center;">Hawaiian Commercial & Sugar Company 2016 Agricultural Burning Permit (Public/Private Lands) Unscheduled Fields List</p> |
|---|

Millwater and Seed Fields

The following fields are not listed on the 2016 HC&S Harvest Schedule because they are seed or “millwater” fields (fields irrigated with factory wastewater) and a specific harvest date has not been assigned to them and/or they are not normally crop fields. It is not possible to forecast exactly when seed cane from these fields will be required or when immediate harvesting of a millwater field may become necessary. These fields are included on the Harvest Map and listed with the Exhibit 2 and Exhibit 3 Burn Procedures as appropriate.

Exhibit 3 Fields: **None**

Exhibit 2 Fields: **911** (94.0 acres)

Potential Early Harvest (2017) Fields

Due to operational uncertainties, HC&S may need to harvest in 2016 certain fields that are currently not scheduled for harvest until 2017. These fields are not identified on the 2016 Harvest Schedule but could potentially require harvesting in late 2016 or early 2017. These fields are included on the Harvest Map and listed with the Exhibit 2 and Exhibit 3 Burn Procedures as appropriate.

Exhibit 3 Fields: **411** (243.3 acres)

Exhibit 2 Fields: **501** (166.0 acres), **917** (204.7 acres)

In order to avoid having to modify the permit later under possibly urgent conditions, HC&S proposes that all of these fields be included in the 2016 permit at this time.

Unscheduled Field Acres Excluded from the Permit

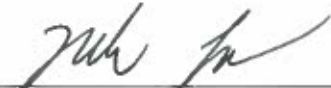
Fields 411, 501, and 911 are located partially on private lands and partially on public lands. Portions of these fields are excluded from this permit as described below.

| | |
|-----------|--|
| Field 411 | Approximately 0.2 crop acres in this field are located on land owned by the State of Hawaii. A total of 1.2 acres in block 4111-E (including 1.0 acre owned by HC&S) are included in this permit. The remainder of the field is excluded from this permit. |
| Field 501 | Approximately 4.2 crop acres in this field surrounding an old filtration plant are located on land owned by the State of Hawaii and are included in this permit. Except for the additional portion of field 501 on State land along Haleakala Highway as noted in the 2016 Harvest Schedule addendum, the remainder of the field is excluded from this permit. |
| Field 911 | Approximately 81.6 crop acres in this field (Section 9114) are located on land owned by the State of Hawaii and are included in this permit. The remainder of the field is excluded from this permit. |

An approximately 0.5-acre portion of Field 917 is located on privately owned land; the remaining 204.2 crop acres are on land owned by the State of Hawaii. The entire field (204.7 acres) is included in this permit.

I have reviewed the above list of unscheduled fields for the 2016 harvesting season and hereby certify it to be accurate and complete.

Certified by:



Harvesting Manager



Date



Director, Agricultural Research and Crop Control



Date

HAWAIIAN COMMERCIAL & SUGAR CO. **PUUNENE, MAUI, HAWAII** **- PUBLIC / PRIVATE LANDS -**

2000 0 2000 4000 6000 8000
 SCALE IN FEET

MAP PREPARED BY HC&S
 AG. ENGINEERING DEPT.

- LEGEND**
- LAND BOUNDARY
 - MAIN ROAD
 - ▲ TRIANGULATION STATION
 - GULCH
 - VILLAGE OR RESIDENTIAL
 - WASTELAND OR PASTURE
 - INDUSTRIAL OR BUSINESS AREA
 - CANE LAND LEASED TO OTHERS
 - AUTOMATED WEATHER STATION

COLOR CODE — 2016 HARVEST

- Direction of prevailing wind at traditional burn times
- Areas to be harvested
- Residential areas
- Business or industrial areas — public & private
- School areas
- Recreational areas

